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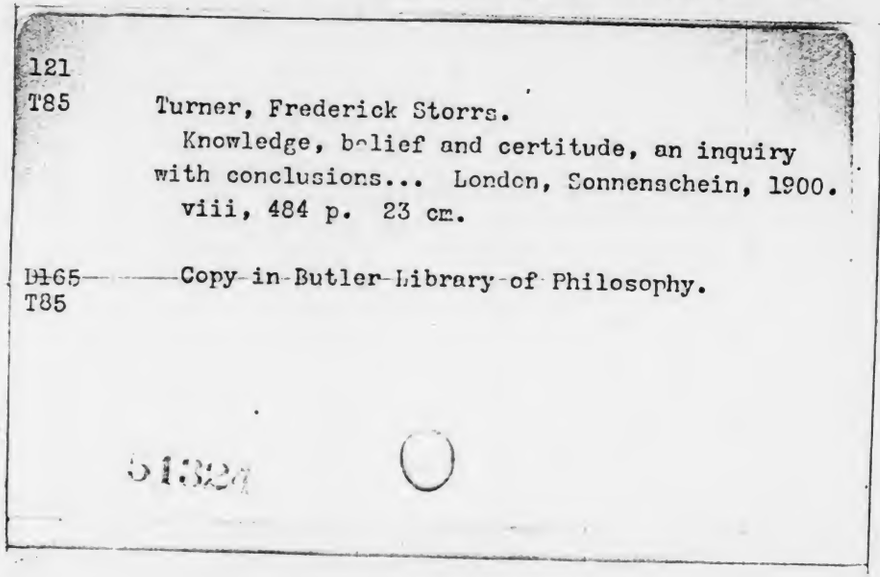

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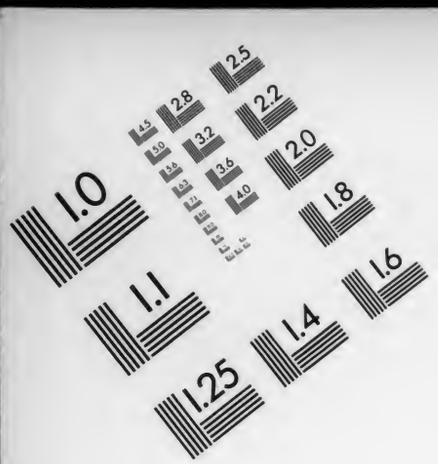

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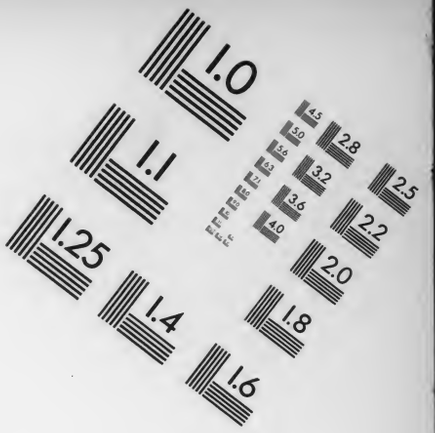

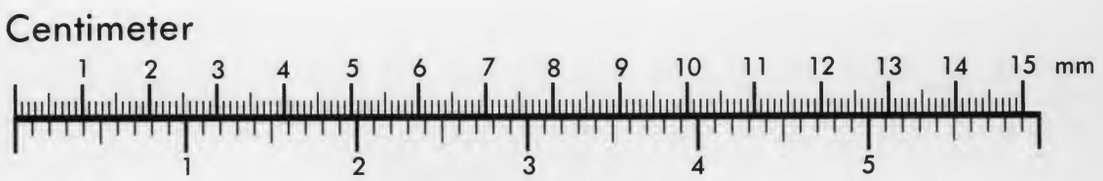

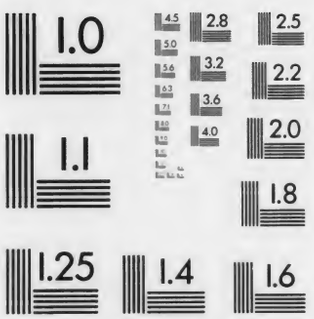

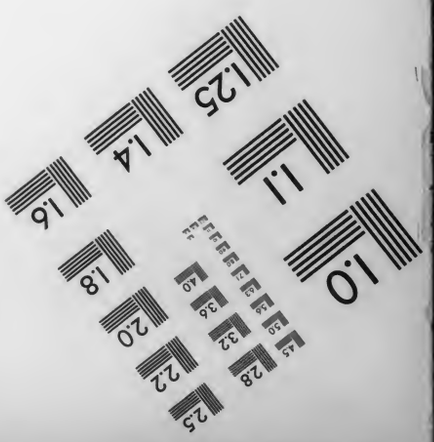

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KNOWLEDGE, BELIEF AND CERTITUDE

KNOWLEDGE, BELIEF

AND

CERTITUDE

AN INQUIRY WITH CONCLUSIONS

BY

FREDERICK STORRS TURNER, B.A. (LOND.)

LONDON
SWAN SONNENSCHEIN & CO., LIMITED
NEW YORK: THE MACMILLAN CO.
1900

PREFACE.

I WISH the reader to know that he has in his hands the record, as well as the results, of a genuine inquiry. When years ago I wrote the first part of this book I had no foresight of the conclusions which afterwards emerged. At that time it seemed to me not unlikely that no conclusion would be reached except that nothing can be known about knowledge. The work has since then undergone repeated revisions; but the first chapters remain substantially as they were originally written: and the successive parts of the book exhibit the course of thought by which the final results were brought to light. If the conclusions surprise the reader, they will not surprise him more than they surprised the writer. A faint foreshadowing of the final result may be seen in the first chapters; but, nevertheless, when those chapters were written, a dense fog covered my mind—I could not discern anything clearly and surely as to the nature of knowledge.

For the discovery of the conclusions reached by this inquiry I am abundantly glad and thankful. So far as they are true—and I have no doubt that they are true in the main—they come from the only Source of all truth: I am but the instrument through which they have been revealed. Criticism will remove the haze, which, arising from my imperfect apprehension and poor expression, still surrounds them; will bring them into clearer light and give them sharper outlines.

Criticism will point out the shortcomings and errors of the book. Errors of course I have not wittingly retained; of shortcomings I am painfully aware; but I have done my best. One complaint only I would anticipate. The book is long, and might have been condensed. But it seems to me that the book is really shorter than it would be if abridged to half its number of pages. Living lately among the mountains, I have learned by experience that the shorter route in distance is often the longer in time. To get to a mountain-top the quickest way is not to climb straight up, but to follow zig-zags and wide curves which go about and about, sometimes even in a direction away from the desired goal. Most readers will, I think, master the book as it is more easily than they would an abridgment of it. To psychologists and philosophers a brief statement of the results in the first place, followed by a condensed argument, would perhaps be more welcome; but in such an exposition there would be little or no indication of the way by which the conclusions actually were reached. And, considering the age and strength of the prejudices which these conclusions will have to encounter, it seems probable that even philosophers may find it necessary to traverse the same road in order to be able to appreciate the goal to which it leads.

LONDON, 14*th September*, 1900.

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BOOK I.—ABSTRACT KNOWLEDGE.

PART I.—PRELIMINARY SURVEY OF THE FACTS.

CHAPTER I.

THE STARTING POINT.

WHAT is knowledge? At first sight the meaning of the question is not apparent. It seems foolish to ask what knowledge *is?* The rational question seems to be—*Is there* knowledge, or, *have we* knowledge, respecting this or that? But to ask "what knowledge *is*" has a silly sound, as though it implied an absurdity. I can imagine my reader thinking off-hand that to know knowledge must be impossible, and that if it were possible it would be useless—surely it is the business of a wise man to acquire all the knowledge he can, and to make sure that it is true knowledge; having done which he had better go and practise it. Yes: but what does that advice, *to make sure that our knowledge* is *true*, imply? Is there, then, knowledge which is not true? There lies the rub. The posing of this question insinuates a fear which may well set us upon a closer examination of the nature and conditions of knowledge.

The word knowledge is used both in an active and in a passive sense. Commonly, when we use it, we mean by knowledge, *what* the mind knows; but we also mean, though we rarely consider that side of the case, *that* the mind knows. In other words, knowledge stands for the *knowing*, and for

what is known ; for the *act* and for the *matter* of knowledge. Almost always our attention is given to the matter of knowledge, because we seek knowledge to guide our actions ; its value lies in its enabling us to avoid evils and to obtain advantages. From this point of view we care nothing about the knowing ; our interest is centred in what is known. Even when the mind has outgrown this utilitarian stage, and can value knowledge for its own sake, habit continues to lead us to take the familiar view of knowledge, as a mass of information about things : so that to want to know about *knowing* seems unnatural. And yet—if this knowledge of ours, or any part of it, should not be *true !* Surely it is not unreasonable to try to understand what *knowing* is, its nature, its tests and the grounds upon which we believe it to be true.

Yet before entering upon any serious study it is wise to ask—is it necessary ? With the infinite universe open to exploration ; with sciences, already rewarded by such splendid achievements, crying out, as it were, for further investigations ; why should we stop to call in question a mental process which is daily and hourly giving practical proof of its trustworthiness ? If knowing is a mental vision, is it not its own sufficient evidence ? Seeing is believing. For " I know " the old Greeks used to say, " I have seen ". When we see clearly and distinctly, whether with the eyes or with the mind, why should we call in question either the testimony of sense or that of mental intuition ? Either we know, or we do not know. If we know, we know, and there is nothing more to be said. If we do not know, then let us try to find out ; and if knowledge is inaccessible, let us frankly confess our ignorance. Were our experience entirely composed of knowledge and ignorance, it might be wise to follow this course : but this is not the case. Ignorance is a mere privation, a lack which may hereafter be supplied, or, if not, the want is not intolerable. But there are worse states than ignorance—error and doubt. Who of us has never made the fatal discovery that he has been mistaken ? that he has been holding that to be knowledge, which turns out not to be true ? Whatever knowledge is, our knowing faculty is not infallible. The detection of error breeds doubt. Doubt has been lauded as the stimulus to inquiry, as the first

stirring of free thought, which is the impulse to criticism leading to the exposure of fallacies and to the overthrow of bigotry and superstition : thus, for all its discomfort, doubt is a blessing in disguise. This may be acknowledged : and yet doubt is not an unmixed good. It tends to spread, until it may threaten all our knowledge, even those parts of it which are most precious.

> It is the little rift within the lute
> That by and by will make the music mute,
> And, ever widening, slowly silence all.

Knowledge and ignorance are not incompatible. The human mind can contain both, and find existence tolerable. But knowledge and doubt can never come to terms. While we can succeed in keeping doubt at a distance, where it hangs over matters which have no special interest for us, we can ignore its inconvenience ; but if its paralysing tentacles creep within ourselves, and coil round the vital parts of our mental and moral constitution, our condition is wretched and perilous. Now it is an historical fact that the progress of science, the increase of knowledge, does not bring with it the diminution of doubt. On the contrary, in the ancient world with the splendid intellectual advance of the Hellenic mind ; again, during the era of the renaissance in Europe ; and for the third time, in the latter half of the present century, great increase in knowledge has been accompanied by a marked increase in scepticism. Is it not then, perhaps, worth while to change our efforts for once ; and instead of endeavouring to get more knowledge, to try to understand the nature and the value of that which we already have ? The detection of error has proved that human knowledge is not infallible : and yet we do not doubt that some of our knowledge is true. But while we have this confidence—without which life would be impracticable—can we also reasonably and honestly be sure that *all* which we now hold as knowledge, is true ? Looking at the history of mankind, and reflecting upon personal experience, he must be an extraordinary individual who can reply with a bold affirmative. If this be so, if we are liable to error, if we are possibly, even probably, at this very moment

under some false persuasion of knowledge in respect to something; surely there can hardly be any inquiry more important, hardly any business more urgent, than an inquiry into the nature, the grounds and the guarantee of knowledge?

But—one may object—how is it, if this inquiry is so obvious and so pressing, that it has not long ago been undertaken and brought to a conclusion? To this the reply is that the inquiry now proposed has to a considerable extent engaged the attention of philosophers, both ancient and modern; although, until modern times it was regarded rather as a part of the general task of philosophy, than as a distinct subject of investigation. Nevertheless, it would be to fail in candour, did we hide the fact that the problem of knowledge has been found extremely difficult, and by some has been pronounced impossible of solution. They ask—how should we *know* knowing? We cannot *see* seeing: we can only see *things*. We cannot *hear* hearing: we hear *sounds*. Knowledge is an instrument intended to be turned upon objects, not upon itself. If the case is to be decided by analogies and metaphors, we can, on the other hand, point to the sciences of optics and acoustics, which are genuine sciences, although they leave the ultimate nature of seeing and hearing still a mystery. And if knowledge is an instrument, he who makes that assertion avers that he, so far, knows knowledge. Is it then presumptuous to try to examine this instrument? In fact, however, as will be plain to those who read further, knowing is nearly, if not quite, an ultimate reality, to attempt to explain which by analogies and metaphors is almost certain to lead us into error. This state of the mind, which we call knowing, is taken on trust by the great majority of the human race; and their so trusting it, without investigation, is natural and reasonable—for they have not even a notion of the need or the possibility of an investigation. But if any one is able to discern that here there is scope for the exercise of his intelligence, he should see at once that this is not a question to be settled off-hand by striking analogy or a happy metaphor. Possibly, knowing itself can never be known, as facts and things are known; but if knowing is an inexplicable mystery, we cannot know that it is so—until we

have made an attempt to explore the mystery, and found it to be in vain. Nor would our failure prove that the mystery is impenetrable: for abler and more persevering inquirers might succeed where we had failed. We may not assert that the problem of knowledge is insoluble, until we are in a position to show grounds for the assertion. That there are natural and necessary limits to human knowledge is an assertion frequently made, and in itself it is easily credible. But it is an assertion which is practically worthless, while nobody can indicate definitely where these limits are fixed, and what subjects fall within and what outside the boundaries. If knowing is itself unknowable, and if this can be demonstrated; then, paradoxical as it sounds, we can know something about knowing, namely, that it is unknowable. Nor would that be a small service to science and to mankind, if any one could indicate to us with the authority of demonstration, the exact line drawn by the nature of things around the human intellect, beyond which it is impossible for the highest intelligence to pass. Until, however, the inquiry into the nature of knowledge has been pushed to a conclusion; until its results are in our hands, and we see that they are solidly established by convincing proofs; no one has a right to deter us by his bare assertion that there are bounds beyond which human knowledge cannot pass. Consequently, the fact that such assertions are freely made, involves the obligation that the problem of knowledge should be thoroughly explored to the utmost possible extent.

Moreover, *knowing* is not the only state of the human mind which is of vital interest. There is the state called *believing*. And these two are certainly somehow related to each other; and the state called *certitude* or *certainty* seems to be either the same as, or an accompaniment of, both of them. It appears to be by no means an unworthy object upon which to expend some hours of study, if we try to get clear notions of the relations of these three states of mind—knowledge, belief, certitude; to understand their points of agreement and connection, and also their differences. To this end the following pages will be devoted. Whether the reader will feel disposed to spend his time and mental toil

upon the difficult questions which are to be discussed will be determined by his need, rather than by the writer's persuasion. If the reader has felt the sting of doubt, and still feels the need of intellectual deliverance from that poison of human peace, he will probably think it worth his while to read on to the end.

An inquiry into the nature of knowledge implies that we have knowledge; and similarly, in respect to belief and certitude. We are not in a condition of absolute ignorance, nor of universal scepticism. As matter of fact, all men have some knowledge, some beliefs, some certitude. This fact is our starting point. If we had no knowledge, of course it would be absurd to propose an inquiry into the nature of knowledge: but it is an absurdity which in this world of ours, at least, no one can be guilty of. For in the natural order of things, all who are not born idiots acquire some knowledge before they are of any age capable of understanding any abstract question such as—what is knowledge? This then is our starting point: we have some certain knowledge which we believe to be true: and this is our inquiry—what is knowledge? what is belief? what is certitude? on what grounds does this belief rest? what are the criteria of knowledge? what is its guarantee? These questions seem all to be linked together; in the course of our inquiry, we may find out something about the nature of their connection. We have to begin at the beginning; and at first, we make no other assertion than this, we have some certain knowledge which we believe to be true; and our question in one word is—why?

CHAPTER II.

CONSCIOUSNESS.

"WE have some certain knowledge and belief"—this one and only assertion we make our point of departure. Leaving out belief and certitude for a separate examination, we contract our primary affirmation to the shorter statement—"we have some knowledge,"—or briefly, "we have knowledge". This assertion every one can make, on the ground of personal experience. It is not a result of analysis; it does not profess to be an ultimate statement beyond which we cannot go, which must precede everything else. It is just an off-hand assertion of a present fact, which we single out from its surroundings, because it is the fact which we wish to examine, and, if possible, to understand. The statement requires no justification, no proof; yet it lies open to the inquiry: How comes it that we are able to make this assertion? What are the circumstances or conditions under which it is made? The answer of common-sense is that this assertion expresses a fact or state of my consciousness; when common-sense recognises a *fact*, or an *existence*, it is satisfied by the bare assertion that "it is". And for us also, this assertion is sufficient and satisfying; only we do not propose to rest here. We, who are curious in regard to the nature of knowledge, finding that knowledge is a fact of consciousness, must pry into this fact, inquiring—what do I mean by consciousness? Is it knowledge? Or is it different from knowledge? And if there is a difference, how are the two related, and how distinguished from each other?

We all know what we mean by *consciousness*—until we are asked to explain: then we find ourselves in a difficulty. Consciousness, we say, is being alive and awake, is feeling, is knowing, is being aware of things, events, our own states.

But these sayings only call forth a string of questions. What is being alive? What is being aware? What is feeling? and so on. To answer these questions is no easier than to answer the first question—what is consciousness? The difficulty is not lessened by the perception that we know nothing of *unconsciousness.* It is true that we have no hesitation in pronouncing stones to be unconscious; but this is only denying to the stones the possession of consciousness: the stone is not like *me*, for I am conscious—the stone is not; this does not help me to describe consciousness by its difference from the stone's manner of existence; for I have not the remotest shadow of a notion of what it is to be a stone. Similarly, all those other expressions, being alive, being awake, etc., have their opposites; but their opposites are not intelligible states. How does it *feel* to be *dead?* Nobody can answer. If the man is dead, he does not feel at all—one may say. But that is all one with saying, he is utterly unconscious, or he is no more, he is nothing. "Nothing" has no meaning; it is a blank, it conveys no idea. In short, if we think about our positive consciousness, we have nothing else which we can indicate as having some resemblance to consciousness: if we think about its negation, we are thinking about nothing at all, or nothing which we can in any way imagine. Let us resort to the half-and-half states. There is sleep, for instance. Dreamless sleep we take to be utter unconsciousness. If we dream, then we are in a way conscious—but it is such a strange way, that nobody seems to have succeeded in explaining it intelligibly. The dreaming state, and all states of semi-consciousness, are, so far as they are intelligible, states of imperfect consciousness. Consequently, their explanation depends upon a prior understanding of the normal consciousness of the every day life.

On the other hand, in spite of the difficulty of defining or describing consciousness, we are so familiar with it that we never suspect anything mysterious or difficult of explanation in it; until, for some purpose, we want an explanation. Birth is a mystery: death is a mystery—but the life between is our natural state; and it comprises all our experience. Consciousness is the general name for being alive and awake,

for seeing, hearing, tasting, smelling, feeling; for thinking, knowing, doubting; for wishing, hoping, fearing; for the whole extent and whole variety of our perceptions, feelings and activities. This consciousness is an individual personal awareness of all these ever-changing states. For myself, I have never once had a consciousness of another person's consciousness. And I understand and believe that other people are equally unable to peer into my consciousness. Nevertheless, we are able to come to a mutual interchange of thought: by which I am perfectly sure that other people are conscious similarly to myself. When a man tells me that his tooth aches, I can sympathise with him; for I have had the kind of consciousness called toothache. Consciousness then can only be described in this way, by referring to this personal acquaintance with it, and by relying on the assent of mankind in general to the description. Practically, this method answers well enough for intercommunication of ideas; but it does not at all alter the difficulty of explaining what consciousness is. Moreover, for our present inquiry it has the disadvantage of resting upon our belief in the existence of other people. Of course we *know* that these other people do exist: but just because it is knowledge or belief—whichever you choose to call it—it is awkward to have to refer to it here. We have, as yet, not begun to consider what knowledge is; still less the grounds and reasons why we believe our knowledge. We are now in the preliminary stage of contemplating consciousness; and we must, so far as possible, carry this piece of work through, without forestalling future conclusions. I would request my reader, therefore, to look upon this appeal to his private individual consciousness, and to his belief that other men exist, as a concession to a difficult position. We could not avoid the irregularity if we are to speak about consciousness at all. But now let us in the rest of this chapter fall back upon the right method. Consciousness really is a strictly private and personal territory, which permits no intrusion from without. Its examination and description therefore is necessarily from within. That which follows is to be taken as the exposition of one individual consciousness. This consciousness is that of the writer; it is also

a description of the reader's consciousness in so far as it is recognised by him as such, and it is a description of every man's consciousness so far as it commands universal assent. But the acceptance of the description does not imply the existence of one common universal thing or state of which each of us has a share, as we regard the air as a common atmosphere which we all breathe, and space as a unity in which we all have our respective localities. The individuality of consciousness is not impaired nor altered in any way by the fact that there are many individuals; though the knowledge that there are these many individuals is important for the interpretation of consciousness.

Others have reflected upon consciousness before, and the results of their introspection and experimentation are recorded in books. This study is called psychology. It might appear to be advisable to diverge here into an examination of the conclusions arrived at by psychological research. We prefer, however, to postpone our particular attention to psychology, until after we have made some progress in our chosen direction. We have elected to study knowledge, not consciousness. In making this election we accept without hesitation the fact that we have knowledge; but we must not, without further ado, take for granted any and every piece of knowledge which would be useful for our purpose. On the contrary, each particular item of knowledge which is to be employed either as material or tool for the accomplishment of our task must, unless it is perfectly self-evident, undergo the strictest scrutiny; and even if self-evident, its meaning and extent must be carefully defined. It will not be safe to accept the conclusions of psychology without a preliminary criticism, which would require a book for itself. Moreover, any special study, such as psychology is, is pursued under the influence of prepossessions, or of definite presuppositions, among which is an assumption of the validity of knowledge, and of its reliableness as a means for acquiring more knowledge. This, however, is an assumption which we must not make, because it is the goal at which we hope to arrive. No doubt, we cannot be absolutely free from prepossessions; in our initial assertion that we have some true knowledge we make an important

assumption. But this is not a reason why we should make the general assumption that all knowledge is true and valid, before we have ascertained what knowledge is. We must jealously guard against multiplying assumptions; lest unawares some unjustified assumption should be admitted, and so all our labour be vitiated. It will be better for us to make our own observations upon consciousness for ourselves; and to regard them when made, not as absolutely final and perfect, but as the best we can now make, and as useful for us provisionally, until we have executed our own task to the best of our ability.

Consciousness, then, seems not to be explicable by comparison with anything else outside itself. All we can do is to consider it as given fact, or actuality; trying to learn something of it from itself; I do not say "from its contents," because the use of that expression suggests that consciousness is something apart from its contents, an area or a vessel into which other things can be put. Consciousness may be a something of this character, but we do not *know* that it is so; on the other hand, consciousness may be only a general name for the several parts of consciousness which are called its contents. Surveying consciousness, we cannot fail to note at once its presentness, its continuity, its multiplicity and its variety. The individuality of consciousness, which has already been noted, is not a characteristic ascertained by contemplation of consciousness itself alone. Conceivably one might exist as a conscious being, without becoming aware of this individuality; because individuality is not known until the existence of other conscious beings is known; and this existence of other conscious beings is not a part of my consciousness, but of my knowledge. For the present, then, we put individuality aside, as a mark of consciousness which depends upon knowledge as yet uncriticised. We referred to it before, merely in order to be able to hold a common consultation upon the matter in hand. Now we proceed to introspection, and we must not introduce anything which is not immediately observable in the consciousness itself.

The *presentness*, sometimes called *immediacy*, of consciousness is a quality which cannot be overlooked. Here we come

upon a clue to the possibility of knowing consciousness. We know consciousness because it contains, or consists of, differences. Were there but one uniform unchanging state of being, it is difficult to apprehend how there could be consciousness at all. In fact, our consciousness is of a succession of changes. And the first difference we note is that of past and present. The present moment of consciousness has a peculiar vividness and force which do not belong to the past moments. In introducing the conception of time, usually thought of under the figure of a point moving ever onward in a straight line, we must beware of being dominated by the figure. An instant of time certainly is not a mathematical point: for a mathematical point has no dimensions, and, if continuously moving, is never for any time in one position. Present consciousness has a duration long enough for perception, for feeling, for thought, for activity. For how many, or rather how few, seconds of time this presentness lasts is a subtle question, to answer which ingenious experiments have been devised. But we need not go beyond our own personal consciousness to be sure both that there is a present moment of consciousness, and that this is always becoming a past moment, and is always being succeeded by a new moment. Not that these moments are ordinarily distinct and sharply divided one from the other. The transition is usually an imperceptible gliding from past to future: between which the present is the immediate now. What interests us is the remarkable difference between past and present. Past consciousness is not wholly lost. It abides in its *effects*, as the headache in the morning results from overfeeding or drinking the night before. It abides, as consciousness, in what we call *memory*. I am conscious now that I was conscious yesterday and last year. But this secondary consciousness called memory is, at least almost always, markedly unlike the present immediate consciousness. It is a consciousness within the consciousness, inferior in distinctness, in strength of feeling, different just by the absence of the feeling of presentness. One other difference may be noted. The past consciousness as viewed in memory has the character of being out of reach—unalterable. The present duration of consciousness, however brief, is the time in which action is

possible. A danger now threatening may be averted or evaded; an advantage now within reach may be seized or neglected. Not so with the past. A past fact or event seems to us fixed and immutable. Much of the past fades out of memory altogether; but that does not alter the fact that it was what it was.

Consciousness is continuous. By this we do not mean merely that time is continuous, but that the present consciousness arises out of the past consciousness, and passes over into the new moment of the incoming future. We cannot assert that the continuity of consciousness is identical with that of time. There are periods of unconsciousness, during which time goes on uninterruptedly. Moreover, as we have just noticed, memory only retains part of past consciousness, and that only imperfectly. Nevertheless, that these gaps of unconsciousness, whether in sleep or swoon, and these failures of memory, do not destroy the continuity of consciousness seems to be the universal experience—some cases of bodily injury or mental disease being excepted. This continuity of consciousness is specially interesting in connection with the important question respecting the unity of consciousness, and that respecting self-consciousness, which questions are also connected together. Here there are two possible views. The continuity of consciousness may be that which produces the impression of its unity; or the unity may be the cause of the feeling of continuity. Again, the unity and continuity of consciousness may be that which receives the name of the self; or the self may be that which retains the memory of its own past, and so gives to consciousness its unity and continuity. Where various views are possible, we cannot affirm that immediate consciousness decides the question. The fact that consciousness is continuous is not questionable; but the ground of this continuity is matter for further inquiry, in the light of knowledge.

The multiplicity and variety of consciousness are evident on the surface. There is, however, a distinction to be made here. Multiplicity of the *objects* of consciousness is one thing; multiplicity of *states* or *kinds* of consciousness is another. We are aware of many things at the same time, and of many

more, an innumerable number, at successive times. So long as these things do not belong to the consciousness, there is no need to suppose that their multiplicity requires any corresponding multiplicity in the consciousness itself. Now what "things" are, and whether they are in any way independent of consciousness, is matter for investigation, is part of the problem of knowledge. At present, in a preliminary examination of consciousness, to enter into this investigation would be premature. But *states* of consciousness mean the consciousness itself, and that there are many such states is indubitable. Seeing, hearing, tasting, smelling, feelings of touch, pressure, resistance, heat, cold, electric shocks; of hunger, thirst, effort, fatigue; of good spirits, hopefulness, sadness, despondency; of preference, desire, aversion, fear, of pain and pleasure, and many degrees and varieties of both; of thinking, doubting, reasoning, knowing, imagining; of willing, assenting, rejecting, repenting, resolving; of hating, loving, and of indifference. Human life seems to be an endless succession of varying moods and conditions of feeling and of activity. Amid all this multiplicity and variety we fail to find consciousness itself as a pure simple feeling different from any and all these various states and kinds. When I am conscious, I am always conscious of something—mostly of several states at once. I see and hear and walk and talk and think and enjoy all at once. Consciousness appears always as a complex, never as one simple, state.

Another characteristic of consciousness, which is not so obvious, and indeed so little obvious that it may altogether escape notice, is its *indefiniteness*. Consciousness has no definite beginning. We all believe that we were once in the womb, then afterwards born into the world and existed as babes; and that at some time our consciousness began—but we do not know when. We cannot think ourselves back to the origin of our intellectual consciousness, nor feel back to the first bodily sensations. At any one moment the exact range of our consciousness, the precise number of its apprehensions, cannot easily be determined. Our field of vision is limited, but there is no visible boundary to it. Our memory of the past never gives back the whole past, but whatever we

remember we always have a feeling that there was more than that. Again, we never know what is coming next. In most cases the next moment brings something like what happened in past moments, but the strange, the novel, the unprecedented may at any time burst in upon us. Consciousness is always going on, never finished; and therefore cannot be added up and perceived as a totality.

This general survey of consciousness leads to the thought that it is a field for exploration rather than an object of knowledge. By the constant presentness of consciousness we are made intimately familiar with it; so we are apt to take it as a matter of course, and to be blind to its mystery. Yet a little reflection and effort suffices to convince us that consciousness is for us an ultimate of thought: we cannot penetrate below consciousness: we cannot think, feel and know apart from consciousness. Although we are altogether destitute of warrant for making consciousness the limit of existence, apart from consciousness we can have no knowledge of existence; for knowing is a kind of consciousness. And it is this observation which opens a way before us. Accepting consciousness as given fact, or actuality, inexplicable, or at least as yet unexplained, we find here the sphere in which, and the occasion by which, knowledge arises. Knowledge comes by thinking, and thinking is set agoing by some perception or feeling; and this perception or feeling is consciousness. This emergence of knowledge from the midst of consciousness is most easily understood by taking an example—the simpler the better. For instance, I look up from my paper, and see a chair. I think, or say to myself, "that is a chair". This assertion is an utterance of knowledge. When I examine this knowing act or state, I observe that my vision of the chair is a consciousness of form and colour only. Now form and colour only are not a chair. I cannot sit down upon form and colour. I require a solid support, a resisting surface, which will sustain my weight. I know "that is a chair" without getting up, feeling it with my hands and sitting in it. This then is a case in which to a consciousness of vision is added a further interpretation by my thinking. Such and such visible signs I know to signify "a chair". All seeing is

consciousness, but all seeing is not knowing. Only yesterday, walking in the fields, I saw a man under a tree in an orchard, with apparently a pole or rod some sixteen feet or so in length, which he was poking up among the boughs of the tree. I could see it all as plainly as I see the chair; but my vision was not knowledge. I wondered what the man was doing. Presently a volume of smoke poured out of the pole: seeing which I knew the seeming pole was a tube. Was it a kind of gun? No: there was no flash and no sound. Next I observed that at the bottom of the tube there was a bellows, which the man worked up and down forcing the smoke out. As I watched him guiding his smoke over branch after branch, I concluded that he was smoking the tree to kill insects, and save his fruit. In this case there was at first consciousness without knowledge, and afterwards consciousness interpreted by knowledge. Knowledge thus acquired may be mistaken. Afterwards I discovered that what I took for smoke was powdered sulphur dust. A great part of our consciousnesses were first interpreted in childhood, and we have now clean forgotten that they ever needed interpretation. And not the bodily senses only, but all our feelings and mental activities supply occasions from which knowledge may arise.

Consciousness, then, is in its simplest expression, an awareness or perception that something is or happens, either in us or outside of us, of a material or a mental nature. Whether it be an awareness of a flash of light or a sweet taste, or an awareness that one is thinking out a mathematical theorem, or meditating on Hegel's philosophy, all awareness or perception is consciousness. That one and the same term should cover such a wide area, should embrace such great diversities as bodily feelings of an animal nature, and also the highest intellectual moral and religious thoughts and feelings, may seem strange and inconvenient. But such is the usage: and inasmuch as undoubtedly all these thinkings, feelings and volitions are states of which we are conscious, the usage seems to be correct. On the other hand, it is desirable to be able to speak of that earlier and humbler consciousness which precedes the growth of knowledge and the development of the higher feelings; and this may be done by calling this

the primitive or bare consciousness, meaning thereby, a consciousness not yet interpreted by knowledge.

There is a remarkable intermingling and interchange of the words consciousness and knowledge, which must not pass unnoticed, as it sometimes has led to a confusion of thought. As to the words, consciousness (*conscientia*) and knowledge (*scientia*) are almost identical. The prefix *con*, of consciousness, originally meant the co-knowledge of conspirators or others who mutually possessed some secret knowledge. Hence it came to mean the knowledge a man has hidden in his own breast, secret from all others: and easily passed to that individual awareness and apprehension, which we mean by consciousness. In the German terms *Bewusstsein* and *wissen*, we perceive the same common root, without the prefix *con*. As to the use of the words, popularly they are nearly interchangeable. Even after careful discrimination, we can say all knowledge is consciousness, and some, if not all, consciousness is knowledge, and, indeed, consciousness itself is a kind of knowledge—and to say this is rather confusing. Let us try to apprehend the facts more clearly.

The term consciousness has a wider and a narrower application. In the wider sense, knowing (like feeling and willing) is included in consciousness. I cannot know without being conscious that I know, just as I cannot feel pain without being conscious that I feel pain. In the narrower sense, consciousness is not knowledge, but a sensation, perception or feeling which requires knowledge for its interpretation. This I would call primitive or bare consciousness. Many of our once primitive consciousnesses have by great and long familiarity become so well known to us that now in their cases the primitive consciousness and the interpreting knowledge have become fused together, and their original distinction is forgotten. We may therefore say, some consciousness, but not all, is knowledge. But on the other hand, all consciousness, both the primitive and the interpreted, is a being aware that something is or happens: now this is a kind of knowledge, and a most important kind, though so incomplete, as sometimes not to be reckoned knowledge at all. Knowledge is an assertion of fact, and of some quality or attribute, or relation

of the fact: as, for instance, "that is a chair". Consciousness is an assertion of a fact, which is felt to be unexplained—"something is," "there is or was something": such are the assertions of consciousness; and we turn them at once into questions—what *is* it? what was *that?* But, in our eagerness to know more, we should not despise altogether the bare consciousness, without which not even a question could be asked. This, too, is a kind of knowledge—knowledge of existence.

Summing up, consciousness is awareness or feeling that there is something—a thing, fact, state or change. It is a general term for the continually repeated state expressed by the assertion "I am conscious of——". When the blank is filled up by some word we have an affirmation. Or, it may take the form of a question: I am conscious of—what?

The general term shows that all the various consciousnesses appear to have a likeness of some kind—or a common bond or ground. But what this likeness, or bond, or ground is, is not yet ascertained.

Bare or primitive consciousness is awareness of something which brings with it the demand for interpretation or meaning. When the interpretation is achieved, we have, in addition to consciousness, knowledge. By their constant association, consciousness and knowledge in many particular instances become practically one mental state in which their diverse characters are merged. Moreover, knowledge itself is a state of consciousness. We are conscious of knowing, as we are of feeling, of doubting, of desiring, etc. Consciousness in its widest application is a term which includes knowledge; in its narrower sense, as bare consciousness, it is not knowledge, or only knowledge that *something* is or happens.

These opinions about consciousness are not to be taken as complete and final, only as the results of a preliminary reflection, which enables us to proceed to an examination of knowledge as arising *in* consciousness.

CHAPTER III.

KNOWLEDGE.

LATE one evening I was walking on the cliff near Dover. The gloom of approaching night hung over the castle and blotted out the sea, when suddenly on the far east a brilliant light shone forth, and then as suddenly disappeared. After an interval of two or three seconds, again the light flashed out, and again it vanished. This was repeated a third time, and I watched for its reappearance. It came after the space of darkness; but the fourth flash was a red flame. Then the series recommenced. Three white lights followed by one red glow. I knew it came from a lighthouse on the French coast. My mind being occupied in meditation upon the transition from consciousness to knowledge, the phenomenon before my eyes seemed to offer itself as an illustration.

When we observe a babe turning its eyes to stare at a lighted candle, we note this as a sign of its attention. Attention is the first step towards knowledge. The processes in the babe's mind by which attention leads to recognition are hidden from us. These, if known at all, are only known by inference from our own later experience. To make use of the incident which has been described, we must lay aside that part of the actual mental state which was due to knowledge gained by previous experience, in order to observe as clearly as possible the bare consciousness of the sensations, and the work of the mind thereon. Let us try to imagine the event as it would have affected the consciousness of an intelligent spectator who had never had any previous experience of *vision;* leaving out of sight the astonishment and perhaps the bewilderment which in an actual case would probably interfere with logical thought, and supposing the spectator to be able to reason upon his novel sensations.

The unlooked-for appearance could not but compel attention. The spectator feels the event as a shock of mental excitement—wonder, pleasure, fear, curiosity, mingled together. *Something* has happened. What is this? Where is it? What caused it? He has no name for the thing, and no explanation: he perceives only that something has happened *to him*. The relation of subject to object immediately appears. And it is not only one thing which has happened, but two. First, there was the brightness; then the dark—hitherto darkness had never been consciously perceived. The second flash came with a fresh shock; for the first carried with it no intimation of a second. But after the second brightness he was watchful. It might be re-enacted. The third appearance of the brilliancy produced an eager outlook for a fourth. But lo! this time a disappointment: the light comes again, but diminished in intensity, and with a difference somehow pleasing. He has no word to describe the difference: we call it the *red* flash. Its appearance has broken the succession; and now he knows not what to expect. Soon, however, his mind is satisfied, as the series begins again, and repeats itself. Expectation is now established: he looks for the lights in their order. Each blaze as it strikes his eyes seems to speak to him. The first says—"I am white, number one: next light will be like me". And the second says—"I am white, number two: the next will be the same". The third says—"White again: look out for *red*". His mind grows into rhythm with the succession of the flashes. It needs not an hour's watching, to produce in him a firm expectation and belief that the lights will go on, keeping their regular order always—an expectation which is fulfilled: until the uprising of the great light which rules the day, before which, not the darkness only, but also the lesser earth-born lights pale away. On the following night, however, the watcher would see again the light on Cap Gris Nez, flashing out across the strait, guiding ships and steamers through the perilous passage.

I think we shall not go far wrong if we take the above illustration as giving us an insight into the essential character of the transition from consciousness to knowledge. In actual experience this transition is not made by a full-grown man

with a trained intellect; but by a babe whose intelligence is a capacity, a potency, the range of which at first is no wider than the experience which gradually awakens it into activity. Even in later life, however, new consciousnesses sometimes occur; though the great discoveries of science have been made, not from new experiences, but from closer attention to familiar events. The changed position of a star, the fall of an apple, a tea-kettle's lid rising up and letting steam escape, are bits of common consciousness which have suggested inquiries leading to splendid acquisitions of knowledge. Our present business is to mark the passage from consciousness to knowledge. In our illustration we observe that knowledge is born of the conjunction of two factors—the somethings given in consciousness, and the activity of the mind working upon these. Out of the variety of the present field of consciousness, the mind singles out, and fixes its attention upon, some particular thing or event: this is remembered: when it recurs, the thing or event is judged to be the same as or like to the former appearance. Cognition is, at first, recognition: the earliest *cognita* are samenesses and differences; permanents and changes. The white light was perceived to be the same light come back again, or a second light like the preceding: the red was perceived as different: the darkness as different from all the lights. Recognition involves comparison and judgment. But the most interesting features of knowledge exhibited in our illustration are, first, its feeling of expectation, amounting after a time to certain belief; and, secondly, the cause of this feeling, which is evidently nothing in the nature of the lights taken as separate events, but is the order of their recurrence regularly repeated. The judgment that the present event is like or unlike the past is cold and dead compared with the vivid interest of the future expectation. We do not feel that we *know* the thing, until we feel sure that we know what it will be and do, the next time, and every time, that it enters into consciousness.

What is knowledge? We are not in a position to answer that question; at present we are merely making a preliminary survey of the facts. But we may put the more modest question—what do we mean by knowledge? In reply to this

demand, our consideration of the lighthouse case suggests the answer—knowledge is a state of mind in which that which was at first a *datum* has become a *cognitum* by a process of thought, the conclusion of which is a judgment in respect to what is, and what will be. The knowledge is an interpretation of the consciousness. Usually, this is expressed by saying knowledge is a correspondence of thought with fact; or, mental judgment in agreement with the reality. It is not that our thoughts are *like* the sensations to which they refer. Knowledge does not consist of mental pictures or photographs inside the brain. That conception of knowledge has some currency; but it seems to be seriously erroneous. It is true that in the memory we do retain a more or less vivid impression of the original event, whatever that was; and where, as in our illustration, the event itself was a vision, its memory may be also a mental vision. In some cases, colours, shapes, also sounds and tones, and other sensations, are "reproduced" by the mind. The power to do this seems to vary in different individuals, and in the same individual at different times. An artist, it may be, who remembers a scene or subject which has strongly impressed him, can *see* it mentally, almost as bright and clear as when it was actually before his eyes—though the well-known preference which painters display for painting from nature and living persons disposes one to think that imagination rarely, if ever, rivals reality. For myself, I have no such power of vivid reproduction, and am of opinion that memory does not always require revived sensations, mere thought-reference by means of a word sufficing to point to a past impression. The important fact, however, is that the revival of past consciousness, whether vivid or faint, whether by mental image or by word, is not knowledge. The white light was seen, vanished, re-appeared: there was no knowledge here, nothing but consciousness. Only when the spectator said to himself "this is *new:* never have I had an experience of this kind before," that was knowledge. When he said of the second light "*there it comes back*," that was knowledge. Again, when he judged the *red* light *different;* that also was knowledge. But *the* knowledge was the expectation that the series of lights

would go on appearing in the same order—a character in the knowledge which was not *given* in the sensations, was not discovered in *them*, but somehow added thereto by the mind of the spectator. This fact that knowledge is not mere imitation of, or correspondence with, data of consciousness, but a mental addition thereto is obvious in many instances. We all know the sun, and the moon: there is but one sun and one moon. If we knew only what is given in consciousness, we should not know this; for the sun rising is in the east, and setting is in the west; at times there is a dazzling sun; at other times a red ball shorn of its radiance. The new moon, the half and full moon, the waning moon, are many appearances—not one. That there is only one sun and one moon is knowledge which sets aside many immediate impressions of consciousness. It seems then that knowledge is not agreement with the appearances which come to us in sensation, but the discovery of a something which is not in the appearances; or the judgment that the appearances have, or belong to, a nature which is not wholly manifested in the appearances.

This lighthouse illustration lies open to the objection that it is imaginative: we have tried to imagine the feelings of a full-grown man born blind and receiving the power of vision. Happily we can observe the origin of knowledge in real cases; for we often pass from ignorance to knowledge: as, for instance, in asking our way. It is worth our while to examine a simple case like this, where ignorance and knowledge existing in two individuals meet face to face. Both the persons stand on the same earth, under the same sky, amid the same surrounding objects. The streets and houses or roads and field-paths are the same for both. Both, too, have a common conception of the place asked about—let us say, the railway station. The one knows the way to it; the other does not. A few words—"First turning to the right, second to the left, then straight on"—communicate the knowledge and dispel the ignorance. What has happened? The man who was just before gazing about uncertainly, now has the conception in his mind of directions of movement, on a fixed surface, which will bring him to the station. The informant

may have in his mind mental pictures of the streets or roads to be traversed, but the recipient of the information does not see those pictures; what he gets is a conception of himself walking, turning to right, then to left, and so arriving at his destination. And the knowledge is not of ideas in the other man's mind, nor of ideas of his own; but of a bit of an external world, where roads and railway stations are fixed in their places, and can be relied upon when we look for them.

I can pass from ignorance to knowledge without the help of another mind. I want to send this book by the post: what is its weight? I put it into my scales: and at once I know it weighs fifteen ounces. How have I acquired this piece of knowledge? By the use of an apparatus which enables me to compare the weight of the book with a series of weights accurately prepared according to a standard scale fixed by the British Government. This system of weights is rendered possible by the constancy of the weights of iron, brass, and other substances; and the weighing implement, the balance or scales, depends for its usefulness on the constancy of the earth's mass or attractive power. Thus my knowledge of the weight of my book is partial knowledge of the fixed nature of things, which, if followed up, refers to the whole globe and the law of gravitation.

To multiply illustrations is unnecessary. Every one can satisfy himself that the great bulk of his knowledge consists of mental judgments; underlying which there is one general conviction that we live in a real world, a world generally stable and reliable. As things are, they were, and they will be: as things change now, they used to change before we were born, and will continue to change after we are dead. Seeing the oak we look for acorns, and look back to the acorn from which the oak grew. Touch hot iron: the pain of a burn will follow. Drink water: thirst will be quenched. We do not know that permanence and regularity extend throughout the whole universe. No universal assumption is indispensable for the beginning of knowledge. But we do believe that things generally are steadfast, and changes are regular; and our knowledge is possible because things have this nature. Our own subjective feelings are not a little variable, and this is

also the case, we observe, with other people. Hence we have less certain knowledge of human feelings than we have of inanimate and corporeal things. Put a bullet through a man's brain; it will kill him: we are sure of that. But whether a burglar caught in the act will fire his pistol, we cannot certainly predict. Where we believe in the permanence and orderly sequence of things and events; there we have, or may attain to, knowledge. At present, we seem to be led to define knowledge as mental judgments of permanence and orderly sequence.

The test of knowledge is verification; that is, the fulfilment of expectation. Knowledge seems to be the result of a completed process. The starting point is some felt need; some desire to be gratified or some pain to be avoided. Need awakens attention: upon an attentive survey of the circumstances, the means of satisfying the need may be immediately evident; or search and experiment may be requisite. The means being known, they are used: the need is satisfied and we have knowledge. When the need recurs, we know how to act. Knowledge is valuable as guide to action; and successful action is the proof of knowledge. This plain and practical way of regarding knowledge is in harmony with what was said before; because it is only in the general belief that things continue to be the same, and to behave in the same way, that we can fix upon ends which we desire to attain, and rely upon the accustomed means for their attainment.

Knowledge, then, is an interpretation of the data of consciousness, based on the belief that the future will be like the past. But how—seeing that all experience is of the past, and we have no experience of the future—can we justify this belief? This is one of the problems of knowledge; perhaps an insoluble one. Meantime we must accept the belief or abandon our inquiry; for without this assumption there is no knowledge to inquire about. To help us a little, let us take another look at those flashing lights seen from Dover cliff. Each light seems a separate event, as though it were produced by some explosive. It comes out of the dark; and the dark succeeds, dividing each flash from the last and the next. But the likeness of the lights to each other, and their regular

sequence, suggest a common cause. Two lanterns, one white, one red, would suffice to produce the effect, if we imagine a man behind a wall, elevating the white light thrice, and then the red once. That hypothesis seems simpler than the notion that every brightness is a new light which is instantly extinguished. But now we walk to Dover pierhead, where is another flashing light. This we can see is not produced by two lanterns, but is one steady flame which burns continuously, without intervals of darkness. We observe that around this light there is a revolving frame containing lenses. As these lenses come between the light and the water, there is a flash of light across the water; and when the framework screens the light, it is dark on the sea. At once we jump to the conclusion that the lighthouse on the other side of the strait has also only one light: that this light really is continuous, and not intermittent as it seems to us; that the white flashes and the red, and the intervening disappearances of light, are all caused by one revolving frame with three white and one red lenses—a framework, which we assume to be moved by machinery. Thus the series of lights is explained by a mechanical arrangement; and the explanation justifies our belief in the future recurrence of the flashes in unfailing regularity. Evidently so long as that machinery is kept at work, you will never see four white flashes nor two red ones in succession. While the machinery holds good, the three-one, three-one, series will be repeated unerringly.

Clearly, if we could ascertain that the world is a machine, that would help to justify our belief in its recurring sequences; and, in fact, the actual observation of recurring sequences tends to produce the belief that the order of nature is mechanical. This is a suggestion which we may take along with us. For the present, we have got the notion that knowledge is mental judgment agreeing with reality, in the sense that it is an interpretation of the data of consciousness, and is a more exact account of what things are, than the immediate bare consciousness is.

This preliminary survey of knowledge is in one respect less satisfactory than the previous survey of consciousness. For we were able to arrive without difficulty at the conclusion

that consciousness is ultimate and inexplicable. It has to be accepted as given matter-of-fact. Knowledge opens out vistas of thought in various directions which must be explored. What right have we to make such enormous assumptions; far exceeding the limits of our experience? What ground have we for reposing confidence in our own mental judgments? What is that *reality* over against us, in respect to which these judgments are made? The task before us is formidable.

CHAPTER IV.

BELIEF AND CERTITUDE.

IN our resort to language as a source of information, we must constantly be on our guard against erroneous inferences. Words are expressions of thoughts, and thoughts refer to things (states, qualities, events, being included under this term). One name for one thing is the logical ideal; hence, when we have a name, we are apt to suppose that this proves the existence of some one definite thing, for which it stands. Already, in the case of consciousness and knowledge, we have seen that this ideal is not fulfilled. Consciousness appears to be indefinite and, at least on the surface, a multiplicity of states. Knowledge means knowing and also what is known. We have now to consider three closely-connected words—knowledge, belief and certitude. It will not be safe to start with a prejudice that these three words denote three separate and independent mental states. We must examine without a prepossession either way.

The association of these terms is obvious. We speak of "certain knowledge" and "certain belief". We guard an assertion by the phrase "to the best of my knowledge and belief". In many cases an assertion is called knowledge or belief indifferently. I know, and I believe, that the earth moves round the sun. But though these two words are frequently interchangeable, there is a felt difference between them, and we often say "I believe," where we cannot say "I know". Some have held the opinion—Sir William Hamilton for one, if my memory is correct—that knowledge is certain, belief only probable, though it may reach the highest degree of probability, called moral certainty. On the whole, this comparative depreciation of belief has generally prevailed during the past half century. If you ask a servant, "Is your

master at home?" the reply may be, "I believe so, sir, but I will go and see". Reading James Payn's essay on Old Age just now, I came to this passage, referring to the suggested hope that after death we shall rejoin the loved ones—

> Gone for a minute, my son, from this room into the next;
> I too shall go in a minute. What time have I to be vext?

"But to most of us this is but cold comfort; it may happen, but it also may not; there is no direct assurance of it, even for the most pious; and at the best, how weak is belief compared with certainty, the meeting we hope for beside the loss we know!" Here a mere possibility, where "may" and "may not" are held equally probable, is regarded as belief; and the strongest belief is pronounced weak compared with knowledge. This marked divorce of belief from certainty attained its climax, perhaps about twenty or thirty years back. Even our great poet, himself so strong in faith, wrote—

> We have but faith, we cannot know;
> For knowledge is of things we see.

Our great philosopher, Herbert Spencer, searching for a ground of knowledge, rejected the notion of sustaining knowledge by the aid of faith, proposing instead the "universal postulate" that a conviction of which the mind cannot divest itself, and the opposite of which is inconceivable must be true. The late Professor Huxley lauded doubt as the mother of science. Professor Clifford denounced the *immorality* of belief when one has not *seen*. J. S. Mill in his Logic maintained that the evidence of the senses is the type of certain knowledge. Thus belief was assailed on all sides, and became almost a by-word and a reproach. Let us try now to compare knowledge and belief impartially. It would be wrong to set out with a resolve to reinstate belief; and equally wrong to accept its degradation without giving it a hearing.

Knowledge and belief are alike, in as much as both are assertions of fact. They differ in that an assertion of knowledge, taken as it stands, stops there, and is nothing more. Knowledge is positive, and, formally at least, absolute. "Two

and two are four"; "gold is heavy"; "water does not flow uphill": the mind makes these assertions, without reference to anything or anyone else. The question in regard to knowledge is—*what* do I know? *what* do you know? The same question is asked concerning belief; but here another question also is possible. Not only can I ask, *what* do you believe? but also *whom* do you believe? Primarily belief is acceptance of testimony. Here we have the phrases "to believe *in* or *on*" to consider. We do not speak of knowing *in* or *on;* but simply of knowing or not knowing. But a man believes in his wife, his friend, his leader; and this way of speech extends farther: one man "believes in luck," another "in fate," another in God. People speak of believing in teetotalism, of believing in homœopathy, of believing in "taking care of number one," and so on. The explanation of all these usages appears to be that belief in the first instance means knowledge which rests on the testimony of another or others; and that this conception of belief is then applied to all knowledge which is not immediately known, but is in some way or other inferred. When I asked my way, and the stranger replied, "first to the right, second to the left, then keep straight on," I knew the way—but only indirectly through his testimony. He might be misdirecting me, through a mistake, or intentionally. Manifestly, belief is in this case not so sure as knowledge. And generally, wherever inference is involved, we are inclined to regard the knowledge as not quite so sure. Twice two are four, I assert positively, absolutely; but that $365 \times 365 = 133{,}225$ I do not assert with exactly the same confidence, because that assertion rests upon a rather long calculation involving many steps, in which there is a possibility of error. I might even make a mistake in copying the result of my calculation. Whatever rests upon a large number of observations, an accumulation of facts, or upon processes of reasoning which have intervened between premises and conclusion, is not so evidently and positively certain as immediate knowledge. Consequently a modest man often contents himself with the assertion, I believe it is so, instead of the downright affirmation, so it is. And considering the notorious fallibility of human observation, memory and reasoning, it seems that

the superior confidence which is given to immediately self-evident knowledge is justified.

Our judgment, then, after this first glance at the facts is that knowledge is more certain than belief, because knowledge is a simple independent assertion that the fact is so; while belief is an assertion of fact, which is based upon the testimony of others, or upon some mental operation into which error may intrude. In other words, knowledge is independent; belief is dependent: knowledge is intuition, belief is inference. This description of belief as dependent judgment is supported by the cases in which belief means believing in a person, or a system, or a course of action. Such belief, usually called faith or trust, makes no particular assertion of fact, but is a general reliance upon the person, or system, as trustworthy: its key-note is dependence, and the meaning of the word in this usage tallies with that which we have seen in it when belief is an assertion of fact. An assertion of knowledge which stands alone, complete in itself, is stronger, more absolute, than an assertion of belief which depends upon some ground other than itself. Such is our conclusion on the *primâ facie* merits of the two.

But here we pause, to call to mind the fact that we have not yet brought our study of knowledge to a conclusion, have indeed as yet hardly made a commencement of it; and that men in general never enter upon the study at all. What if there be *no absolute* knowledge? What if the common notion of *positive* knowledge is an illusion? Already, as the result of our preliminary observations, we have reason for modifying this first superficial estimate of knowledge and belief to no inconsiderable extent. Unless we have gone altogether on a wrong tack, knowledge is always dependent upon consciousness. All knowledge is about *something;* and that something in the last resort, either is, or is inferred from, that which is given in consciousness. And consciousness itself is not knowledge; except the bare knowledge or awareness of existence. Knowledge, depending upon consciousness for its given occasion or matter, is itself a result of mental operations—attention, thinking, judging. So if our preliminary observation of knowledge is correct, knowledge has

the two marks of belief—dependence on a ground outside itself, and dependence on the correctness of a process of reasoning. Thus instead of our first hasty judgment that knowledge is superior to belief, we are now led to a judgment which reverses it; namely, all knowledge is belief.

Without anticipating our final conclusion as to the nature and grounds of knowledge—if we succeed at arriving at such a conclusion—it may be pointed out that this identification of knowledge with belief is supported by the great sceptic Hume and other philosophers. No doubt the popular view is expressed by Mill. From the time of Plato, indeed in all ages and in all countries, the mass of men have regarded the immediate evidence of their own senses as the most certain source of truth; and—compared with this—the remote, the invisible, the inferential, seems to them comparatively uncertain. What are called "facts of consciousness" are indicated by philosophers as the most reliable of our knowledge. Hume says, "consciousness never deceives". But here it is often overlooked that though consciousness does not deceive, knowledge is an interpretation, and may misinterpret consciousness. Who of us has not often mistrusted his own eyesight and hearing, and asked a bystander—did you see that? did you hear that? In fact, our unhesitating acceptance of "facts of consciousness" is belief; our confidence in our own interpretation of the given facts is belief; and the calling in of the aid of other observers, which is universal in the study of natural science, is a sign of imperfect confidence in the accuracy of the individual, and of greater confidence in that which is confirmed by many observers.

There is still another element of belief in our knowledge; namely, that of expectation. By knowledge, we mean not only that a thing is so, or was so, but that it will be so in the future. All our general knowledge, our science, is of this character. It predicts. Now this prediction rests upon a belief in the stability and order of nature. The grounds of this belief will have to be considered hereafter: at present it is sufficient to note the fact. We have no immediate knowledge of the future. Whether this belief in the stability and order of nature can be justified by logical grounds, or not;

the future stability is not given *now* as a fact of consciousness, is not immediately apprehensible, but is dependent upon many far-reaching inferences from many sources; among which the testimony of our progenitors as to the past is not the least important.

Leaving it then an open question whether we have, or have not, any absolute or positive knowledge, I think a little reflection will convince every one that nearly the whole of our knowledge is belief. If belief be dependence upon the testimony of others, take away from the mass of our knowledge all that directly or indirectly depends upon such testimony—how much will be left? If, again, from that remainder, we subtract all the results of processes of reasoning, the final residuum will be small. Moreover, reasoning is impossible without first premises, and how can we get first premises, except by belief in something—whether we call the something instinct, or reason, or nature, or God? On the whole I conclude that the natural and necessary superiority of knowledge in comparison with belief is not proved. Knowledge and belief are both mental affirmations respecting some object of thought; both are alike in meaning to be true; both are alike as liable through human fallibility to be mistaken. The difference between them seems to be in the accompanying state of mind in relation to the affirmation. If there is no feeling of dependence on anything outside the mere affirmation, we call it knowledge. If, when making the affirmation, we feel that it is dependent upon something beyond itself, we call the affirmation belief. The same assertion may be knowledge to one man, belief to another; or to the same assertor, at one time knowledge, at another belief. A child, and a peasant, will say, "that is a chair," "that is a sheep," without the shadow of a feeling that these assertions are anything more than bare knowledge of names and things: chair is one thing, sheep is another thing; and both child and peasant have clear and firm conceptions of chair and sheep, which so far as they go are true. We, however, have been reflecting a little, and have observed that in such cases the knowledge rests upon consciousness of sensations, and is an interpretation of this consciousness. Now we can go farther and note that

when we affirm "that is a chair," or "that is a sheep," we are really, if not consciously, relying upon the stability and order of nature. By "sheep," for instance, we mean a herbivorous animal, afraid of man, which will not harm us. Among a thousand or a million sheep we do not expect to meet with one which will attack us as a bear or tiger would. Sheep are all of one pattern and one temperament. How do we know this? Well, strictly speaking, we do not know it; we believe it. The world is an orderly place, where the teeth and ferocity of a tiger are not to be feared under the disguise of a sheep's form. So after a little reflection we are inclined to say the assertion "that is a sheep" is at least as much belief as it is knowledge.

Hamilton adduces a distinction propounded by Augustine —"we *know* what rests upon *reason;* we believe what rests upon authority".[1] Resting upon authority is in fact relying upon the testimony of others that they know what we do not know. Children, and adults also to a large extent, repose confidence in the larger knowledge of their parents, elders, teachers, the learned, the possessors of wider experience. This confidence is natural and holds good universally until personal experience teaches us that it is not always trustworthy; but it is not an irrational confidence; on the contrary, so far as we exercise our reason, it approves itself as a reasonable ground of belief though it may be wrongly applied. When the authority claimed is not that of superior human knowledge, but of divine revelation contained in a book, communicated to a prophet, or through a religious society, or its head, reason has to be exercised to ascertain the grounds upon which we may safely acknowledge the reality of the revelation. Children, and many adults, are not able to enter upon so serious an investigation for themselves; and in their case the natural tendency to trust in those who appear to them the wisest and best teachers prevails, not through an intellectual process, but by the support of moral and religious feelings. How far, in what cases, and to what extent such belief in authority is reasonable and right is a question of the highest importance,

[1] *Hamilton upon Reid*, p. 760.

which cannot suitably be discussed in this place. After our investigation into the validity and guarantees of knowledge in general, we shall be in a better position to reconsider that question. Meantime one must sadly confess that ecclesiastical authority has too often been abused; and this, perhaps more than any other cause, has brought about the prevalent degradation of belief as compared with knowledge. Nevertheless authority always has been, and in the nature of the case always will be, a ground of belief for the multitude. Its influence never was, I think, greater than it is to-day; for, if ecclesiastical authority has markedly waned, the universal acceptance of the results of science by those who are personally ignorant of the facts and reasoning upon which they rest more than compensates for the loss which the principle of authority has incurred through the discovery of ecclesiastical abuses.

Belief, then, does not appear to be essentially different from knowledge. On the contrary, it seems that the impression of their difference arises from the first unreflecting acceptance of knowledge, which regards it as self-sufficient, complete and final. A little consideration of knowledge, and how we come by it, leads us in most cases to a discovery that our knowledge is, or involves, belief. Whether there is or is not some small original nucleus of knowledge of an absolute or positive character, is one of the questions with which our investigation will have to deal.

Certitude, or certainty, has now to be examined. The word *certus* means determined, fixed, settled, and hence, sure, trustworthy, true, our "certain". Is certainty a quality of mind or of things? At first we are ready to say—of both. We speak of the certainty of an eclipse, of the uncertainty of the weather. In so saying, however, we may mean that *we* are certain or uncertain; not that the things are so. At any rate, modern science repudiates the notion of uncertainty in things. Every atom has its position and movement determined. Where everything is certain and nothing irregular the notion of certainty as a quality, or distinction, loses its significance. Things are as they are. We gain no knowledge by saying that all are certain. The universe being infinitely vast, endlessly diversified, incalculably intricate, though all is

certain, it may be argued that *we* have no certainty of anything, until we know the whole, and the laws which govern its innumerable changes. Certainty, then, as an attribute of things, leaves us wholly in the dark as to their character. However, in any case, our business is the investigation of *knowing*, not of the known; therefore it is certitude as a mental state which interests us.

What then is this mental certitude? It is easy to reply that it is *being certain; feeling sure* that our knowledge is true. Certitude is certain knowledge, or certain belief. Is there then any uncertain knowledge or belief? If I am not sure that my knowledge is true, then, in fact, I do not know. If I do not believe certainly, then I am uncertain; that is, I doubt. Thus it appears as though this word "certain" added nothing to knowledge and belief, and were as superfluous in the mental as in the physical world. But we have to look at the facts. In the first place, certitude is a natural characteristic of consciousness. "Consciousness never deceives," said Hume.[1] "We cannot avoid accepting as true the verdict of consciousness," says Herbert Spencer.[2] Perhaps these assertions are too bald and positive. Is it safe to affirm that consciousness is absolutely certain? If our observation was correct, consciousness is an awareness that something is, but not a knowledge of what it is; consciousness therefore is in its nature essentially indefinite; and that which is indefinite is hardly certain. But by facts of consciousness, or the verdict of consciousness, I suppose the apprehended and interpreted consciousness is meant. In fact, that part of consciousness which is prominent and forceful, which compels attention, cannot be doubted. We are sure that *something* is, or happens; and generally of more than this: that is we cannot mistake a pain for a pleasure, light for darkness, etc. Consciousness, when it comes to us with vividness and force, comes with certainty. But we almost always have around this centre of consciousness, a fringe or penumbra which is not so clear and certain. And yet, if we look into our consciousness for this *feeling* of certitude, it is not always to be found there;

[1] *Inquiry*, sec. vii., part i. [2] *First Principles*, p. 140.

we may even say its presence is rarely observable. Indeed, paradoxical as it sounds, the more we are certain, the less our *feeling* of certitude. If we were always perfectly certain I suppose we should not feel it at all. This is one of the cases which are perhaps not so very rare; where the negative name expresses the positive feeling. Incertitude, or doubt, is a distressing feeling which cannot be overlooked. For instance, I am walking towards London, and know that I am on the right road: I have no *feeling* of my certainty: I just walk on, noticing the hedges, the trees, the people, but thinking and feeling nothing in respect to the road: I come to where the road bifurcates: there is no sign-post; no one in sight of whom to inquire—immediately incertitude crops up. Then, looking back, I remember that my former state was one of certitude. Actually our daily life from moment to moment is a constant certitude in respect to a thousand matters; and the occurrence of incertitude is comparatively rare. The certitude so constantly enjoyed does not arise into a positive feeling. I eat my food, without *feeling sure* that food nourishes; I use the knife and fork, without thinking "I am certain that this will cut," "that will hold"; I raise the glass and drink, without being *conscious* that I have muscular power. I just do the things, without noticing them. Where, then, and what is this certitude? Ordinarily it is not a separate feeling but the normal state or condition of possessing and using knowledge or belief, without being disturbed by even the suspicion of uncertainty. This state or condition when perturbed by doubt, passes away; but if again the doubt is dispelled, and the original certitude returns, it is now sensibly felt. Or, apart from the painful shock of doubt, whenever we, setting ourselves to criticise our knowledge and belief, perceive the possibility of questions and objections, and find that the knowledge and belief nevertheless remain unshaken, then also there is a positive feeling of certitude.

Certitude, then, occurs in consciousness, in knowledge, in belief. It is not a separate kind of consciousness—a distinct feeling existing apart from these. Normally, consciousness is certitude, knowledge is certitude, belief is certitude. Doubt,

however, breaks up this original oneness. When doubt has been overcome, then the feeling of "being certain" is observable in consciousness, as a quality or concomitant of the knowledge and belief. After the period of incertitude, we acquire this feeling of certitude; without it our knowledge and belief do not satisfy us.

So far as we have been able to discern, these three words, knowledge, belief, certitude, do not mean three wholly distinct qualities or states of mind; but at the most, somewhat varying qualities which always exist together, though in varying proportions, in one complex mental state, which is now called by one of these names, now by another. Knowledge is not wholly separable from belief, nor belief from knowledge. Certitude at first is all one with the actual knowledge or belief, and is not noticed as a quality until its opposite, incertitude, has intruded into consciousness; after which, by contrast, certitude is positively felt.

The one word which unites all three is *truth*. Knowledge, belief, certitude all mean to be, all assert themselves to be, *true;* that is, they refer to real things, or to a system of real things, with which they claim to be in harmony, so that their assertions are verified; their expectations are fulfilled; and actions taken in accordance with them lead to the designed results. Truth is not a *tertium quid* which exists between knowledge and reality; but is just this agreement or correspondence or oneness of knowledge with reality.

CHAPTER V.

REALITY.

WE have been engaged in a preliminary survey of consciousness, knowledge, belief and certitude, in order to obtain a clear perception of what we mean by these words. This has led us to a provisional definition of knowledge, as mental judgment which is in accordance with reality. Reality is a general term for real things, which are the objects of knowledge. What are these "real things"? What do we mean by reality? It may be thought that we have no business to ask such questions. We have voluntarily elected to study subjective knowledge, not objective things; and now, before we have arrived at any result, are we to turn aside from our proper work to inquire about things in general? It seems a vagary—but we have entered on a quite unusual investigation, and we must be tolerant with ourselves, if some unusual proceedings have to be tried. At present we are making a preliminary survey of the factors of our problem; in so doing we have observed that what we seem to mean by knowledge is thinking about things in accordance with the reality of the things. This implies that we have, or think we have, some knowledge of real things, that is of reality. Is it then improper to ask—what do we mean by reality? It is true the sciences are occupied in the study of real things; but they seem to be quite unconscious of what we want to know. As they never raise the question—what is knowing? so they seem equally oblivious of our present question—what is reality? Each science assumes as a matter of course that it is concerned with real things, but there is no science of things in general, no science which teaches us what to think about reality. And yet, inasmuch as we all believe that science is real knowledge of real objects,

there must be some notion of reality, however vague, in our minds.

The notion commonly held as to the nature of real things seems to be an inference from the supposed nature of knowledge. First, knowledge is regarded as a mental copy or counterpart of the real things; and then it is inferred that the real things are like our knowledge of them. This seems to be good reasoning; for the affirmation that my knowledge is *like* the things appears to imply that the things are *like* the knowledge. But, upon reflection, this conception of the nature of real things seems faulty. Imitating Kant, we may point out that a man who has debts amounting to a hundred pounds knows that a hundred golden sovereigns would pay those debts. His knowledge of a hundred sovereigns however is one thing; and the existence of a hundred sovereigns in his cash-box is another thing. The knowledge is a thought in his mind, and does not of itself put money in his purse. If we suppose him to know not only what sovereigns are but to know also that the sovereigns exist in his own possession, still the knowledge of the fact and the fact itself are two different things; if alike, also different, as a reflection of a face in a mirror is like the face, but is not the face. Upon consideration, it seems that the conception of knowledge as *likeness* to objects known is open to question. As matter of fact, the mind often has in its consciousness pictures and other resemblances of previous states of consciousness. We mentally *see* a face, or a house, or a machine; we can think the thing over, feature by feature, part by part. Or, we mentally hear noises or musical tones. These revivals of past presentations form an important part of our mental furniture. Some persons think that such reproductions are indispensable, that we cannot think and reason except by using them. Others hold that, although they are frequently employed, we can also think and reason without them, by means of words which are symbols, not copies, of the things named. In either case, the notion that knowledge is *like* its objects seems to have arisen from this mental reproduction of bygone consciousnesses. And it is overlooked that these copies in the mind are copies, not of knowledge, but of the sensations and feelings which are summed up in the term consciousness. If our observation of consciousness and of knowledge has not been altogether mistaken, consciousness and knowledge are different. Consciousness indicates the presence of *something*, and puts the question—*What?* Knowledge is the answer to this question. This answer is not a part of the original consciousness, but something affirmed by the mind to exist, which was either not at all in the consciousness, or not perceived there at the time. This last case is mentioned, because states of consciousness are complex, and generally contain more than that one object in reference to which knowledge is being sought. It appears however on examination that in many, perhaps in all cases, the assertion of knowledge is something which never appears in consciousness. For instance, I see a *red* light: my consciousness of vision is of a peculiar quality called by the name *red*. I know that the light is red, not blue, not green, but red, the colour of blood. In the mere visual sensation, there is nothing at all which is like all this thinking: there is no blood, no blue colour, no green colour. If this red light were the first light I had ever seen, the only colour ever visible to my eyes, I should not call it *red*; it would not be *red* to me, for *red* means different from blue and green, means a colour often seen in various places, at various times. The sensation of redness seen by the eyes on one occasion is not by itself knowledge; the knowledge which recognises *this* light as a red light is brought to the sensation by a mind which knew *red* before *this* light was seen. And so in knowledge generally; it is more than the immediate consciousness, and of another character. Consciousness is sensation and feeling; knowledge is thinking and judging. Consciousness introduces objects to the mind; knowledge gives them their names, tells their characters. There seems then no ground for the opinion that knowledge is like its objects. Knowing is a state of the mind, an activity called affirmation or judgment, which refers to objects—these objects being in the very act of judgment affirmed to be different from the knower. The common persuasion that knowledge and objects are like one another seems to have sprung from the fusion of consciousness with knowledge of which we took notice in a former chapter. The question

whether *consciousness* is like the real objects is another question altogether; to which we shall have to refer hereafter. In the meantime, the only likeness which actually and indisputably exists among the factors which lead to knowledge is the likeness between memories of past consciousnesses and those past consciousnesses themselves.

Abandoning the theory that knowledge is likeness to the real things, we must also give up the inference that the real things are like our thoughts of them. The question, then, lies before us—*what* are real things? *what* is reality? At present we observe that these objects are brought before the mind by the way of consciousness; and that, then, the mind asserts their nature or character to be this or that. It becomes then a question—In which of these two ways have we the closest contact with, and clearest conception of, reality: by the way of consciousness, or by the way of knowledge? The prompt, off-hand answer is—consciousness gives us the real things. For all of us, visible and tangible things have a solid and massive matter-of-factness, which leads us naturally to regard them as pre-eminently real. Sounds and odours seem in comparison only half-real entities. Feelings and thoughts appear to be of a spiritual or ghostly character: whether they ought to be called real in the strict sense may be questioned. This supreme confidence in the reality of that which can be seen, touched, pushed, and which being pushed, resists our efforts and refuses to move, is a state of mind of which we shall have to take account. At present, we can only make a mental note of the fact, and pass on. So far as our first outlook on the whole subject-matter before us enables us to form any faint outline of a conception, it appears to be clear that we owe our being aware of the existence of things to the sensations and feelings which we call consciousness—vision and touch being the most conspicuous of these. Without the perceptions of sight and touch, our external world as we now are in contact with it would not exist for us. But, on the other hand, merely being aware of sensations does not seem to amount to knowledge. When people vaunt their certainty of what they see with their eyes, and hold in their hands, they really mean, not the immediate and bare consciousness of

vision and tangibility, but the interpretation of this consciousness which they learned to put upon it in childhood, and which has become so familiar and habitual to them that they have clean forgotten that it is an interpretation, that they once had to learn it bit by bit, in a long process of thousands and thousands of observations, imitations, efforts and judgments. The process occupied, I suppose, about the first three years of life—and then it is utterly forgotten, while its effects last the whole lifetime after.

In this, the earliest stage of our inquiry, it is evident that we cannot venture upon any assertion as to the nature of real things, or the reality. The utmost that we can attempt is to take note of what passes in our minds when we think and speak of realities. Let us try to get a clear notion of our own meaning when we say a thing is real.

We believe that we are surrounded by a multitude of real objects—what do we mean by *real?* We must try to avoid all unnecessary self-mystification. Mystery underlies everything—consciousness itself is a mystery—but mystification is the production of mental perplexity through our own lack of accuracy. Among these troublesome mystifications, I think we may reckon the opposition between *appearance* and *reality*, which has worried philosophy from Locke's time to the present day. Locke could not be quite sure that he knew real external objects. Berkeley asserted *esse est percipi;* equivalent to "reality is appearance"; and therefore, "appearance is reality". Kant distinguished between "phenomena" things as they appear to us, the knowable; and "noumena," "things-in-themselves," which he pronounced unknowable. The root-question here is—Is there any ground for making the distinction between appearance and reality; and, if so, what is the ground? An appearance or phenomenon is something given to or in consciousness; that is, it is the thing, fact or event, the consciousness of which produces the assertions—"there is something," "that was something," "something happened". This given something is the basis of what we mean by a real thing. To be *real*, the thing must so appear, or have appeared, in consciousness; or be logically inferred from such appearances. Of course we mean by *real*,

real *for us*, for our knowledge. This is not an assertion that the universe contains nothing besides that which is real for us; but as we cannot deny this, so we are equally unable to assert it positively. Reality, then, means reality to and for us. In each particular case, the "given in consciousness" means that consciousness is a seeing, a touching, a smelling, or some other sensation or mental feeling of something real. This being so, the suggestion of an antithesis between appearance and reality seems to be unjustified. There is no ground for it. The immediate fact of consciousness is against it. Poetic licence may sing "things are not what they seem,"—but literally and truly, things are, for us, *because* they seem. Consciousness is the source of knowledge; and is itself knowledge of the existence of things. At first view, the introduction of this separation and opposition between appearance and reality seems to be wanton.

But Locke and Kant stand in the first rank of philosophers, and the contemptuous ease with which "things-in-themselves" have been tossed aside by Kant's disciples is no proof that the disciples are intellectually superior to the master. If it is an error to separate appearance from reality, there must be some real ground which occasioned the error. This ground appears to be the inevitable imperfection of knowledge. Consciousness supplies the given something which knowledge interprets. But our knowing is always partial, never complete, never exhaustive. Consequently, after knowledge has reached its utmost, there is always an unknown residuum in the thing. The thing as given in consciousness, and the thing-in-itself, are not two, but one. The understanding which we have of the thing, however, falls short of the real nature of the thing. It is this defect of our knowledge which has been the occasion of asserting a distinction between appearance and reality. And the error seems to arise out of the very common failure to distinguish between consciousness and knowledge. Appearance is consciousness; knowledge is interpretation, or giving a meaning to consciousness; reality is the something given in consciousness, which the knowing mind interprets to the best of its ability. Now *knowing* feels its own imperfection. That is, the *knowing* of reflective minds

which duly consider and ponder their knowledge is attended by this sense of imperfection; although shallow and conceited people may fall into the delusion that they possess an absolute knowledge. This awareness that our knowledge is not adequate to the reality justifies a distinction between our *knowing*, and the *thing known*. But the original consciousness of *something given* is the link which unites the two. We know the something given, and the something given is the real thing: as Berkeley said, *esse est percipi*. But our perception and our knowledge together do not constitute a perfect knowledge. As reasonable and sober men, we must hold all our knowledge with humility; being ready to accept its enlargement and even its modification, whensoever new light breaks in upon us. But this acknowledgment of the inadequacy and progressiveness of knowledge does not require us to set our consciousness and the reality in opposition to each other; nor to condemn our first natural interpretations of consciousness as illusions. The true conception seems to be that consciousness as *given* is a real contact with a real world; and that knowledge is at its best only an approximation to a perfect understanding of this real world.

By reality, then, we mean that which appears in consciousness, and that which is logically inferred from these appearances. In usage, the word reality often bears a more limited signification. Dreams, shams, shadows, errors, illusions, are called unreal, although they all appear in consciousness. We have here a secondary meaning of the term "reality," according to which part of consciousness is real, and part unreal. In this secondary usage the primary is reversed. At first we judge our knowing by the standard of the real things: knowledge is conformity to the things. Then, we turn round, and judge things by the standard of our knowledge: that which is what I think it to be is real. Wax flowers and fruits are according to the first meaning of reality as real as sealing-wax. Dreams as passing states of consciousness are as real as our waking states. An error is a judgment, though a false one. Therefore, while we keep to our original meaning for reality, namely, as an assertion that "something is," errors, dreams and illusions of every kind are parts of the

real world. In the case of dreaming, however, certain consciousnesses occur, which in the morning are condemned as impossibilities. While my body was lying in bed in London, I dreamt that I was far away in a distant land, that I was a child, that I saw and conversed with people who died long ago. In the morning I say, "it was a dream": meaning that the events of the dream did not happen as in the dream they seemed to happen, but actually were imaginations or fancies, similar to such as I can voluntarily, when awake, indulge in as memories or as fancies. This means that in my judgment of reality, I have introduced an element not previously noticed. In the reality of my waking life I have not merely a number and succession of separate consciousnesses, but a perception that these, or most of these, fit into one another and form a congruous system of space, time and constant qualities, which as a whole has a recognisably steadfast character. To this extent my consciousness of reality has become knowledge of reality. If, then, an event such as a dream actually occurs, but does not fit into my system of reality, it is pronounced unreal. No longer judging knowledge by the given fact, I judge the given fact by my knowledge of the general character of reality. The dream taken as real contradicts this general character, confuses time and space, demands impossibilities. As a dream, I admit that I had such impressions, but I refuse to believe them. There is no contradiction between the two meanings of reality. The dream as a transient consciousness, was a real event: but it was an event out of harmony with the general character of events in the waking life. Call it a dream, know that it is only a dream, and its reality is without reproach. For myself, I have at times in my dreaming been able to say to myself—"this is not real: it is only dreaming: soon I shall wake and it will be gone". Mostly, however, dreams seem true while they last. All illusions and errors are of this nature—they seem at the time to be true—but afterwards they are recognised as being out of harmony with that great mass of well-established knowledge which embraces what we call the real world. This secondary usage of the term "reality" is therefore supplementary to the first; and brings to light an

important characteristic of knowledge. We begin with actual consciousness, with plain facts, solid realities, and make these our standard. Knowledge must conform to the facts. But as knowledge grows and waxes strong and bold, we now use it as our standard by which to try consciousness and facts. Nor is this proceeding unreasonable. If knowledge corresponds to reality, reality also corresponds to knowledge. When a reality is clear, sharp, unmistakable, it is compulsory; our judgment must submit to be moulded by it. But when some vague, indistinct "something" appears in consciousness which seems to contradict all that we know of reality already, naturally we are inclined to suspect that the first impression of the consciousness is not the right impression. Of course, this reasoning from knowledge to the real is somewhat hazardous—for our knowledge is imperfect. But there it is as a fact. Men do so reason, and the existence of this reasoning proves that men in general have come to regard the world, that which we call nature, as a system of things with a character that has to some extent been ascertained, and upon the constancy of which we can rely.

PART II.—THE NATURE AND GROUNDS OF KNOWLEDGE.

CHAPTER I.

SEARCH FOR A METHOD.

THE preceding survey has led to the conclusion that knowledge is not an ultimate and therefore wholly inexplicable fact. Knowledge, we have seen, is preceded by data of consciousness, and is a result of the mind's activity in the presence of these data. Primitive or bare consciousness is something which is, or happens; and is of something which is, or happens. Knowledge does not come first of all. In order that knowledge may begin, there must be a something that can know. Putting this in the language of common sense, —before we can know, we must be alive and conscious. A corpse has no knowledge—a living man in dreamless sleep, or made unconscious by chloroform, has no conscious knowledge. For the present feeling that I know, I must be alive and awake; then my knowledge is, or happens, in me. But this state of, or event in, myself has always its object: I know that something is, or happens: and this something is the datum given to my consciousness. I observe the something, I think about it, I form a judgment: "this is fire; I must not touch it; if I do, it will hurt me". The result of the thinking, the judgment, is what we mean by knowledge. Therefore we have adopted the usual definition: knowledge is thinking in accordance with reality. Perhaps it would be better to say, knowledge consists of true thoughts, that is, thoughts which correspond to real beings and things. For thinking is a wider term than knowing: thinking includes the process of attention, comparison, etc., of which the result, the final thinking, or the judgment, is the knowing.

So far we have succeeded in getting a first grip of the subject-matter of our inquiry. We can distinguish it from other mental states, from ignorance, from doubt, from pleasure, from pain, from desire, from fear, etc.; and from external states of being, such as the solar system and the chemical elements. All these internal states and external things are known in experience; but they are distinguishable from the *knowing* of them by the mind. This *knowing* is the mental state with which we are concerned. And we know what we want to know about it; namely, whether our knowing is true. For this end, and not from mere curiosity, we seek to understand the nature and the grounds of knowledge. In prosecuting this inquiry we have to proceed just as we do in other cases. We must attend to the subject-matter, observe it; experiment upon it or with it, if possible; reflect upon it; reason about it; compare our individual impressions and inferences with those of other observers. As in all thinking, we shall use the knowledge we already possess as our instrument. This is the only possible method. If the use of this method is challenged, because it involves belief in our knowledge, we can only point to the fact that we are employing the method of all the sciences. The objection, if valid, would not only block our inquiry, but would undermine the most certain conclusions of mathematical and physical science.

Nevertheless, we must take heed to our ways. Confucius said to a disciple, "Shall I teach you what knowledge is? When you know, know; when you know not, do not know; —that is knowledge." For us, more than for inquirers in other branches of knowledge, to watch ourselves closely, lest we assume a knowledge which we do not possess, is of vital importance. In ordinary affairs, and in the stricter ways of the sciences, it is always understood that some assumptions are taken for granted. In each particular science those assumptions which appear to require it are carefully indicated and if possible defined: hence, axioms, postulates and definitions. There is, however, one axiom universally trusted in all the sciences, though never mentioned by any one of them, and this is just the axiom we are going to employ—namely,

the fact, assertion and belief that we have some certain knowledge, or, in other words, that some knowledge is true. But there is this difference between our investigation and the sciences. The astronomer, the chemist, the geologist accepts this belief without examining it. He makes it his starting point, turns his back upon it, and marches on to more knowledge. We too make our start from exactly the same place; but instead of turning our backs upon it, we take this fact as the field of our investigation. What we are to examine is this very certainty of knowledge. What is this *knowing?* Is it true? How do we know it to be true? We go down to the roots; we seek the foundation of the fundamental truths of the sciences. Therefore it is incumbent upon us not to begin by doubting everything—that would be suicidal, were it possible—but to resolve that while we rest in the assured conviction that we have true knowledge, we will not arbitrarily assume, or surreptitiously smuggle in, any particular item of knowledge. Our watchword is—no presuppositions! This does not mean that we propose to begin from a state of vacuum, a Buddhistic nirvana, or Hegelian "being = nothing". It means that whatsoever assertion is made in respect to our knowledge must be passed under the strictest scrutiny, and not permitted to have part in our reasoning until we are perfectly satisfied of its truth. Seeing that we have some certain knowledge, it is this, and this only, which is fit to be adduced, if we would by inspection ascertain the nature of knowledge; and if there are any knowable grounds of knowledge, it is by the inspection of this certain knowledge that we may expect to discover these grounds. Presuppositions, postulates, assumptions, will not serve our purpose; we need facts, truths, certainties, to build upon. If these are not given, or attainable, our inquiry is abortive. Without certitude in our premises, we cannot have certitude in our conclusion.

A less stringent rule has, indeed, been recommended and followed. "In what way," asked Mr. Herbert Spencer, "must philosophy set out? The developed intelligence is framed upon certain organised and consolidated conceptions of which it cannot divest itself; and which it can no more stir without using than the body can stir without help of its limbs. In

what way, then, is it possible for intelligence, striving after philosophy, to give any account of these conceptions, and to show either their validity, or their invalidity? There is but one way. Those of them which are vital, or cannot be severed from the rest without mental dissolution, must be assumed as true ***provisionally***. The fundamental intuitions that are essential to the process of thinking must be temporarily accepted as unquestionable, leaving the assumption of their unquestionableness to be justified by the results."[1] Mr. Spencer was contemplating a unification, or reasoned system, of all the sciences: not an inquiry into the nature and grounds of knowledge. Even for his purpose, however, the hypothetical method has not proved satisfactory. For, according to his stipulation, the assumptions remain provisional until the unification or philosophy is completed. Will that day ever arrive? Before it can come, the whole circle of the sciences must be brought to perfection. Provisional, therefore, these conceptions remain. Consequently the whole edifice built upon these provisional foundations is itself of a provisional character.

The quotation from Mr. Spencer lies open to another remark. If our developed intelligence contains some "organised and consolidated conceptions of which it cannot divest itself," upon which it is framed, without which it cannot work, then it would seem that this very fact must give authority to these conceptions. This is the argument of the great Kant in his famous work. What I would remark now, however, is that whatever authority these conceptions have, belongs to them all, not merely to a selection from them, supposed to be "vital". If we cannot divest ourselves of them, cannot think and reason without them, clearly it is our first business to take note of them, to draw up a full list, to give an exact description, so far as possible. In the *Critique of Pure Reason*, Kant essayed to fulfil this task. Whether the task is too hard for human powers, or whether Kant fell into some error, in any case his map of the human mind is the subject of debate among philosophers, and, notoriously, is difficult of compre-

[1] *First Principles*, fifth edition, p. 137.

hension by ordinary minds. This, however, we must acknowledge, that if there are embedded in the very substance of the human mind laws of thinking, also natural and inevitable conceptions, these cannot be of a provisional character. If we cannot be furnished with an intelligible account of them for our guidance, we must keep a sharp look out, in the hope that we may recognise them and perceive their character, as we proceed on our way.

But in the absence of a list of "first principles" and of a map or plan of our mental machinery, how is it possible to proceed? At first glance no answer is ready; and it may occur to the mind that there are preliminary studies which are indispensable, in order to furnish the tools and material for our exploration. Logic treats of the laws and methods of reasoning; psychology describes, classifies and discusses the contents of the stream of consciousness; one might suppose that these sciences would equip us for our work, and furnish us with some general directions as to the course we must follow. No doubt a complete mastery of all that these sciences can teach is desirable; as, indeed, for our grave undertaking, a previous mastery of all the sciences would be a good preparation. Even this, however, would not suffice to make the ideal explorer. To be perfectly prepared for the task, he should be well read in history and literature, should be rich in poetic feeling and artistic sensibility. He should also be a practical man, one who has been statesman, warrior, traveller and merchant; one who has succeeded and also has failed, who has triumphed and suffered martyrdom; who is rich in all kinds of experience. He cannot know too much nor too well. But until this ideal man appears, we have each of us to do the best he can for himself, with such equipment as he can get. As regards logic and psychology, however, interesting and useful as these are, they are at present largely debatable ground. Our attitude to each science is one of expectancy. Give us some certain conclusions, we say, and we shall accept them gratefully. But they must be certainties. Arithmetic and astronomy are not so closely allied to our work; but they give us the multiplication table and the law of gravitation; instances of certain knowledge most useful to us as illustrations

of what knowledge is. The physiology of the brain is, no doubt, more closely and vitally connected with the process of knowing than the movement of the stars; but then little is known about the movements of the molecules of the brain, and what is known does not give much help in our work. So far as we are at present informed, there are brain-excitements when we think erroneously, as there are when we know the truth; and physiology has not yet discovered the difference between the brain-action in the two cases.

Another suggestion is: study the genesis or evolution of knowledge. Observe the babies, watch the dogs, the ants, the bees, the birds. Far be it from us to depreciate such interesting and instructive employment of our faculties. In regard to these, as to all other scientific investigations, we can have only one attitude. Whatever certain results can be obtained in these studies are to us of high value. But from such observations alone the goal of our inquiry will not be reached. For when we study the manifestations of intelligence in babes, savages, animals, the knowledge which we attribute to them is conceived as similar to our own knowledge. Apart from the immediate consciousness which we have of our own mental states, we can have no conception whatever of the mental state of a baby or a bee. That which we think into them as their knowledge is a vague and dim likeness to, with an undefined difference from, the knowledge of the human mind. While our own knowledge is so hard to understand, this second-hand and conjectural imitation, which we imagine in mental natures of a different order, cannot be expected to throw much light upon it. Nor can we hope that a study of the evolution of mind will conduct us to our goal. Supposing that we could trace the development of intelligence in a series of stages from the ant to the archangel, knowledge of the series would not explain knowledge itself, nor prove knowledge to be true. If the one particular stage which is human knowledge is inexplicable and of doubtful validity, the fact that there are other stages only increases the area of our ignorance. At all events, we at present do not set out to discover how knowledge grows from height to height, but rather, what knowledge is and what it is worth. For our

purpose, then, the only knowledge of which we are directly conscious is the knowledge which we must study. As a matter of fact, we know that the knowledge of all civilised and educated men and women is in some respects similar or identical; consequently, it is possible for us to co-operate in a common effort to explore the contents of our minds. Keeping to the exact fact, however, our investigation is, to every mind engaged in it, an individual and personal affair. Strictly speaking, it is not knowledge in general which is on its trial, but each man asks himself—Is my knowledge true? Is my knowledge trustworthy? However many and valuable the sidelights thrown upon our small central field from the sciences which sweep the whole horizon with their searchlights, and however good the influence of those external studies as mental preparations for our work, it does not seem possible that anything except direct examination of knowledge itself can either accomplish our desired end or demonstrate the impossibility of its accomplishment.

Our method, then, cannot be mapped out in advance. The fact we start with is the fact that we have some certain knowledge. This knowledge must be subjected to examination. In the process of examining it we must not permit the introduction of any presuppositions whatever. Of course, we cannot but be aware that the minds which undertake the examination have already some settled convictions, some cherished beliefs, which cannot be laid aside, if we would; and these minds also probably have some bias and prejudices of which they are not conscious. But we make no pretence of being other than we are. Only one rule is imperative. Nothing must be adduced as certain which is not certain. Whatever "first principles" or "organised conceptions" our minds harbour, whenever one of these emerges and claims to exert influence upon our reasoning, it must be tested in every possible way, and not allowed to stand as certain knowledge until we are perfectly satisfied of its validity.

CHAPTER II.

THREE GIVEN CERTITUDES.

IN the preliminary consideration of our subject-matter we recognised that what we mean by knowledge is a thought, or collection of thoughts, which agrees with reality. Thinking is a process in the mind which sometimes ends in knowledge, sometimes fails of its purpose. The mind or self in which this process goes on is called the *subject:* that in reference to which the mind is seeking knowledge is called the *object.* These terms have become technical in our special field of thought; it is well therefore to note that for us *subject* means the self or mind, which does the thinking; *object* means the *something* with which the thinking is concerned—that which is, as it were, *thrown against* the subject. Even technical usage, however, is not quite free from ambiguity. In most cases, the object of thought is something outside the mind; and thus the word *objective* is frequently used with the sense of *external;* and frequently this externality is the predominating significance. We must carefully guard ourselves from this confusion of thought. When we are speaking of objects of thought, the word *object* has no reference to place or space: it means simply that of which we think. We can and do think of the mind itself, its states, its capacities, its sensations, its judgments; and thus these are *objective* to the thinker. In this use of the word, the internal objects are equally objective with the external objects. That there is an external world in space, a world which is independent of the human mind is the general belief; and this belief is expressed by the phrase "objective reality". We commonly suppose ourselves to have immediate consciousness and knowledge of this objective reality; but inasmuch as this involves *knowledge*, the nature

of which we have undertaken to examine, we must not assume off-hand that this belief is true. In case of the appearance of an assumption of this kind, it must be understood as merely the usage of current modes of speech, which will have in due course to be scrutinised. We can have no dogma of "objective reality" while the nature of knowledge is an open question.

Turning our attention to our chosen subject-matter, knowledge, let us select some one piece of certain knowledge for examination. Let it be—"two and two are four". Here we have a self-evident truth of number. This and other truths of the same order we learned in childhood as "the multiplication table". As to the accordance of this knowledge with reality, we have practical proof in innumerable cases of counting and calculating in everyday life. But to the reflective mind this confirmation in experience is unnecessary, for the thoughts expressed by the words "one," "two," "three," "four," are quite clear, and their relations are intuitively apprehended. Seeing that anything which casts light upon the nature of knowledge is of interest to us, this immediate perception must not pass unnoticed. In some cases the mind needs no argument, no process of reasoning, no indication of grounds or proofs; but of its own power at once and without effort sees at a glance, and enters into full possession of, the clear, sure and perfect certainty. That the mind has this power of *intuition* is a great fact: the faculty is noble, wonderful, precious. Nothing that can be said about origin or evolution lessens the glory or the usefulness of this power. It may have been slowly and painfully acquired by the child; in him it may be the effect of inherited tendencies or brain-arrangements. All this history alters not a jot of the fact that the adult can see and know truth directly and with certainty. Again, another feature of great interest is observable in this case. These numbers are abstract; they are not things, though originally suggested by things. They are thoughts, and as thoughts are objects of knowledge. This shows that it is not imperative to go outside the mind for objects. There are *subjective* objects.

As a further illustration of this class of objects, take another bit of certain knowledge. "A pin's prick causes

pain." Pain is *subjective*. I suppose that among the feelings which produce the conviction of reality, pain is one of the most effectual. And pain is an object of thought, and to some extent of knowledge. This again is a *subjective* object.

But not all the objects of knowledge are subjective. Take for instance—"the moon revolves round the earth"; this is a piece of knowledge relating to the external world. What this external world *is* we are not able to say; but whatever it is, we do not perceive in it that necessary connection with the subject which we perceive in the case of the multiplication table and the pain. The *knowledge* that the moon revolves round the earth is subjective, but the *things* to which it points are regarded as external to the knowing mind. How do we come by this piece of knowledge? The revolution of the moon round the earth is not directly perceived by vision; but deduced by reasoning from a series of observations. This is an instance which indicates another important fact concerning knowledge: some of our knowledge is *inferential*. Arithmetic is an illustration of this kind of knowledge. In dealing with numbers the mind's power of intuition is soon exhausted; but by patient calculations results are obtained which extend far beyond the bounds of direct intuition. I can assert immediately that $2 + 3 = 5$; but that $791 + 454 = 1245$ is not evident at a glance. Nevertheless, when the various steps in a long chain of mathematical reasoning are correct, its conclusion is as certain as one of intuition. That the four angles of a square are right angles is intuitively perceived: that the angles of any triangle are equal to two right angles is a truth established by reasoning, which merely looking at triangles would hardly suggest.

Within our certain knowledge, then, we can observe that we have some knowledge of states of the mind, and also some knowledge of external things: also that in both departments we have both intuitive and inferential knowledge. Thus knowledge is not altogether unknowable. Yet at present we have not got far in the direction in which we want to go. For these distinctions of the objects of knowledge refer to the known; whereas we desire to study the *knowing*. That we can know intuitively, and that reasoning can lead to certain

conclusions is, indeed, a great satisfaction; but this is just our starting point: we have some certain knowledge. The *nature* of this knowledge is what we seek to understand; and that as a stage on the way to ascertaining its *validity*. Now in order to be able to move at all in this desired direction, we want some basis of operations. At present we have the mere fact of knowledge, and an indefinite collection of items of knowledge, and have not so much as a bond of unity in them. But what we want must be contained in our certain knowledge, if it is anywhere. Once more we must examine it, to see if we have omitted anything. The instances already adduced will serve as well as any for examples.

Two and two are four. We considered this as a knowledge of numbers, noticed its abstract or ideal character, our intuitive apprehension of its truth, and so forth. We began with this as a specimen of certain knowledge, and concluded after close inspection that so it is. Whatever else may be dubitable, at least this numerical truth will stand. Have we then really exhausted the whole substance of this piece of knowledge? Have we so much as stated this truth itself completely? "Two and two are four": taken thus, as an abstraction—what is it? The question is unanswerable and indeed unmeaning; for we cannot so much as think the faintest ghost of a meaning into it as an abstraction. We call numbers abstract. From what are they abstracted? From things: from sticks, stones, fingers, or anything you please. Are the things diminished by the abstraction? No—the things are unchanged. What then do we mean by the *abstraction?* We mean that the human mind thinks the numbers, without thinking the things. Now we come to recognise our oversight. In this piece of knowledge expressed by the symbols $2+2=4$, the whole concrete reality is *the human mind knowing that* $2+2=4$. "Two and two are four" is not knowledge. The numbers know nothing, are nothing. The knowledge is this mental fact that *I know two and two to be four*. Take away the "I know," and there is no knowledge left. Think now of the second case: the prick causing pain. There is no knowledge in pins, and no knowledge in pain. But *I know* that a pin's prick has caused *me* pain; and I know

that if I thrust one into you, you will feel pain. The knowledge is the mental judgment that there is a causal connection between these two data of consciousness, the prick and the pain. Remove the subject from this totality, the pain and the knowledge disappear. A corpse does not feel. The pin and the inanimate body remain, and the body can be pricked; but the knowledge "prick causes pain" is not forthcoming. So with our knowledge that the moon revolves round the earth; the material masses and their relative positions exist independently of us, but human knowledge of their existence is in human minds. And whatever the object of knowledge may be, whether some external thing, event, or series of events, or some state of subjective being, in any and every case the subject is present as recipient and agent. So far as we can perceive and understand, there neither is nor can be any exception to this law. It is, of course, of human knowledge only that we speak: of no other knowledge are we able to assert anything, nor even to conjecture anything, except that it may be somewhat like and somehow different from our own. In regard to human knowledge, we have only the evidence of consciousness—but this is invariable and confirmed by universal assent. Not that in knowing we always say to ourselves—"here am *I* knowing *this*". On the contrary, ninety-nine times out of a hundred, we give our whole, or the greater part, of our attention to the object, and have only a slight bye-feeling of the self which knows. Nevertheless, when we reflect upon any state of consciousness which we call knowing, we perceive it as "my knowing," and only so. A bit or instance of knowing, separated from a knower, has never been perceived, and is indeed an unmeaning collocation of words. The subject is the one indispensable condition of knowledge; and in the recognition of this dependence on the subject, we have the first item of real knowledge of knowledge. Inherence in the conscious self gives unity to knowledge. Between "twice two are four," "pin's prick causes pain," "moon moves round the earth," there is no intelligible bond of connection; but all these diverse kinds of knowledge are united in the knowing of one mind. This selfness of knowledge gives it all its vitality, its living interest. Of the three cases cited only one has a

direct reference to human feeling; yet the abstract truths of arithmetic and the remote truths of astronomy are of high interest and importance to man, because of his personal relations to them in his practical life. Most important of all for knowledge of knowledge is this fact of its existence in the subject, because the unity, the steadfastness, the reliability of the subject is the basis of knowledge, without which it cannot exist at all. Idiots and the insane have knowledge only of an impaired kind, marred by defect and delusion. The subject, that is the self or mind, is a given certitude upon which knowledge rests.

We speak of "the subject," "the self," "the mind," as of one individual being—whereas, in fact, there are a thousand millions of them in the world. And already this multitude of witnesses has been cited to bear witness that knowledge belongs to "the self". Reflection upon these facts brings to light another fundamental conception of the nature of knowledge. The self is one individual consciousness, and knowledge is always "my knowing": at the same time each one of us knows that there are many other similar selves; all of whom have similar knowledge. This is a wonderful fact, a fact of incalculable interest and importance, for knowledge, and for the understanding of knowledge. At present let us fix our attention on this one point: our most certain knowledge is that which is guaranteed by universal assent. Indeed the characteristic of knowledge is just this: that it is true for everybody. Each of us, no doubt, has in his own mind some private knowledge of his own personal experience which belongs to himself alone. But what we generally mean by knowledge is universal truth. The multiplication table is common property. If I knew only that a pin's prick causes me pain, and did not know whether it would affect others similarly, my knowledge of the pin and its effects would not be what it is. *Knowing* is, as a mental state, individual; *knowing* as an assertion of fact or truth, is universal; that is, it applies to whole classes, and to every individual of the class. The amount of knowledge possessed by different minds varies greatly; but each of us means by knowledge that which is true for all the rest, and will be seen to be true by every one

who has the facts before him, and is sufficiently educated to understand them. This characteristic of knowledge is universally apprehended; but it may be questioned whether in endeavouring to understand the nature of knowledge, the import of this universality has received the attention it deserves. That knowledge is a relation of *subject* to *object* is a common-place; but it is seldom noticed that it is also a relation of *subject* to *subjects*. And yet this relation is not less vital than the other. Whether or no an isolated human being could attain to some dim glimmerings of intelligence is matter of uncertainty; but it is certain that the actual *knowing* which you and I and all men have is quite as much a product of other minds as it is of the individual mind; and probably the other minds have had the greater share in bringing it into existence. If the personal self is the seed-bed in which knowledge grows, other selves are the sowers of the seed. And when the knowledge appears its standard of comparison is the knowledge of those other selves: the unanimous judgment of all sets upon the individual knowledge the seal of certainty. Hence the second fundamental certitude upon which knowledge is based is the certitude of other selves.

Examination of our certain knowledge exhibits also a third certitude—the certitude of reality. In every instance this is found when due attention is given. In the pain, and in the planets, it is obvious. But the numbers, it may be said, are not realities: "two" does not mean two oranges or two men, but just "two," an abstract idea. So the lines and triangles of Euclid are not concrete existences in the physical world. That is so: the real is not necessarily visible and tangible. These mathematical entities, number, point, line, square, circle, etc., exist only as thoughts in human minds. But are not human minds "realities"? If you push us to comparison, to each one of us his own conscious existence is the most immediately and positively certain fact he knows. Always knowledge has its object; but that object need not be an external material thing, nor another mind, but may be the mind itself, or some of its contents. If you consider it, there can be no knowledge which does not refer to reality: for this is the very nature of knowledge, that it makes a true assertion

about some real being or thing, or some real state or change of the real being or thing. This is not to say that knowledge refers to all reality, to reality as a unit, or a whole, or a universal system. That would be an immense assumption: and here at the outset of our investigation assumptions are excluded. We admit only certainties. The reality apprehended in our actual knowledge is "something real" in each case; and our knowledge, so far as it goes, agrees with that "something real". This is the third fundamental certitude upon which knowledge is based.

These three certitudes are contained in our most certain knowledge; and without them knowledge could not be. They are the pre-conditions of knowledge, not its results. We received them by inheritance, by birthright, by gift of nature. Those who never reflect upon knowledge, enjoy and employ these certitudes, as they enjoy and employ the solid ground, the invisible air, the intangible light, possessing, using, never doubting them, but not fully and clearly apprehending the character, position and value of these inestimable gifts. We are born into, nourished, and attain to manhood's knowledge by these certitudes. When we have come to full age, and begin to study our knowledge, we discover that it all rests upon these certitudes, was acquired by their means, and receives its guarantee from them. They are not assumptions or presuppositions; they are data, given facts of consciousness. I am, and know that I am: other men are, and I know that they are: the world is, and I know that it is. Upon these certainties, your knowledge, my knowledge, everyone's knowledge, is based. Upon these certainties all the sciences are based. Practically these certainties are indubitable and undoubted. They are never called in question except sometimes in psychology and philosophy, or metaphysics: a strange exception the occasion and meaning of which we must consider in due order. At present, it suffices to point out that no one really and sanely doubts their certitudes as existing facts or realities: what is doubted is rather the common interpretations of the facts. Certainly we do not know *what* we are, or *what* the world is—except to a very small and dim extent. All this, however, has to be

considered in more detail. At first it is enough to grasp the great and essential truth: that our knowledge is built upon these certitudes, and stands or falls with them. These are the source, and means and guarantee of our knowledge. If we have any certain knowledge, it is because we have these certitudes. In studying the nature of knowledge, these given fundamental certitudes demand our attention first of all. Let us begin with the certitude of the Self; not, however, without noticing that in fact all the three certitudes co-exist in fully developed minds; and that the order in which we consider them is not to be taken as indicating the time-order in which they appear in consciousness. Possibly in infantile experience the self is discerned last; but that is a question for psychology, and for us is unimportant.

CHAPTER III.

THE SELF.

IN actual life nobody doubts the self. Naturally, whatever thing or event comes before us, the first thought is—how will it affect *me?* Human life indeed is a continuous succession of self-adjustments to varied circumstances in which the motive is to obtain good and avoid harm to self. On occasions, we sacrifice self-interest for the welfare of others; but the existence of the self is then even more plainly in evidence, because of the strain we have to put upon it in order to curb its wonted instincts. In actual experience the self is indubitable. "As sure as I am of my own existence" is the expression of our strongest certainty.

In this inquiry, however, we are going quite outside the ordinary track of thought; we must expect extraordinary questions, and ourselves put them. We must be prepared to find intelligent men suggesting doubts and difficulties which to common sense seem absurd. In this case, some of the keenest intellects have asserted that the notion of the self is an illusion. Something there is, they allow, which occasions the illusion, and this something, they say, is "the stream of consciousness" which they assert to be the only reality pointed to by the word "self". Or it is said, that we know nothing of the self: it may exist: practically it is necessary to assume its existence; but it is outside knowledge, a mere unknown "something".

Two questions have to be considered: how do we know that there is a self? and, what do we know of the self? In answer to the first question, the natural impulse is to reply: "I know myself directly. I am conscious of myself." Upon reflection however, this direct knowledge cannot be put into the witness-box: it is not of such a kind that we can present

it to another mind, nor can we distinctly set it before our own. Hence Descartes' *cogito, ergo sum.* What we distinctly perceive is the self thinking, or pleased, or angry, or knowing, or doubting, or in some other state. The mind apart from some particular condition of its being is not a clear object of perception. We fall back upon consciousness. I am conscious of myself. What is consciousness? It is awareness or feeling. Here we have a firm grip of fact, actuality, reality; but just these, the facts, the realities, are objects for knowledge, that is, objects in reference to which we desire and seek knowledge, but cannot always find it. If the knowledge is found, it ought to be producible. When we assert consciousness of reality, we assert only that *something is;* and this assertion hardly amounts to knowledge.

And yet this bare "something is," if repeated in experience, and that continuously or frequently, gives us the lowest kind of knowledge—bare recognition: the recognition of permanence. At least so much knowledge of the self we undoubtedly possess. This feeling of self is not a new feeling each time, but recognised as the return of a feeling which existed before, and when attention is directed towards it, it is called the feeling of personal identity. This identity is not absolute. Permanence and change are different as concepts, but are not mutually exclusive. The dog which I knew from a puppy to its old age and death was *the same* dog; though, also, the puppy was *not* the same as the full-grown animal. So in the identity and permanence of the self, there is room for life's gradual evolution. Again, knowledge consists largely of judgments of likeness or sameness, and difference, the results of comparison. Such knowledge we have in respect to the self; as it appears in the judgments, "I am the person I was ten years ago"; "I am also now somewhat different from that person, having now a longer past experience, a somewhat larger knowledge, and other variations". To deny all knowledge of the self is therefore contrary to the fact. On the other hand, it may be pointed out that such knowledge as the above does not give an exact definition of the self, nor a clear mental picture of it, nor anything which we can hold up before our own minds,

and exhibit to others, as the self by itself, known throughout, as to its substance, construction, powers and relations. This observation, however, will not much disturb those who know that all this may be said of our knowledge of every concrete thing, from a grain of sand to the sun in the sky.

The self as subject of knowledge, when made the object of our contemplation, adds not a little to our knowledge of the self. The notion that it is impossible to gain knowledge in this way is a fallacy which has already been exposed; we have now to refute it over again by practical proof. Apart from the false definition of "object" which made it necessarily non-mental, the form of the term "subject" suggests a passive receptiveness which discourages expectation of fruitful results. There is a passive stage in the acquisition of knowledge, but this belongs strictly to the primitive consciousness to which come the impressions and experiences we have called data. The subject is very far from being "a sheet of white paper"; on the contrary, in its pursuit of knowledge it appears as the active "I think," not the passive "I feel". We do not attain knowledge by indolent acquiescence, but by eager attention: and the result of this mental activity is on the one hand the attainment of knowledge of the object and, on the other, by the felt reaction, a vivid perception also of the knowing subject. To illustrate this let us consider the action of the mind in assuring itself of its familiar certainty that "two and two are four". This numerical truth we learned by rote in childhood, and have found it hold good ever since; but, possibly, because it is so simple and self-evident, we may never have taken the trouble to reason it out. Let us do so now. For convenience, let us represent our two twos by black dots, and name them by letters, thus:—

a . . *b*
c . . *d*

Here by a single intuition the certainty is plainly visible. There are two twos, and these two twos are the four. The four is the *name* for the whole object contemplated, which object contains the two twos: but it is not the *name* which makes the certainty. The certainty is the mental intuition that the

addition of the first two units to the second two units produces, not now only, but always, this other mental concept which we call four. Turning it about in our thoughts every way, we see it is and must be so, cannot be otherwise. The order in which we take the twos makes no difference. We may begin with $(a + b) + (c + d) = 4$, or reversely, $(c + d) + (a + b) = 4$. Nor is the truth confined to these couples: $(a + c) + (b + d) = 4$, and diagonally, $(a + d) + (b + c) = 4$. Nor does it depend upon arrangement. Our twos may be in line . . . . or in any other position, . : .; in any and every case the total is four. Instead of dots if we take lines, thus, I I I I, or thus, □, we equally perceive the necessity of the truth. And if, dispensing with visible representations, we think of two twos conjoined, whether we think of them as mathematical points, or under concrete images, such as men or oranges, the numerical truth is self-evident. We perceive that the mind so thinks, and cannot think otherwise,

$$2 + 2 = 4;$$

and this thinking is knowledge, because it is true, not now only, but always, immutably.

Once started upon this path, the mind cannot rest here, but is carried forward to other truths of number, and to deeply interesting inquiries which arise therefrom. Our business, however, is to turn our backs upon these, to reflect upon the *subject* which has been engaged in the preceding process of thought. At once we are struck with the spectacle presented to our observation: the subject is seen as a *judge*, an *assertor* of truth. It is *I* who see and affirm this truth. In nature things do not exist in twos or fours, but in millions and billions; they are grouped now in one way, now in another; and the combinations are ceaselessly changing. The fixed, immutable truths of number are mental abstractions and mental judgments. This subject, this self, which can of its own power and authority perceive and judge in this way, is surely neither a nonentity nor wholly unknown. The self is that which can think out, and judge concerning, truth: its judging activity is a mode of its self-existence.

There is more than this to be discerned in the above

illustration. We can see in this case, the permanence and unity of the self. Consider, that this short and easy piece of reasoning consists of distinct steps. First, I posit two dots . . *a* and *b*; these are *two*. This itself is a judgment formed by a mental process. Then I posit other two dots . . *c* and *d*. Thirdly I contemplate the two pairs together, and pronounce them four. Suppose now that the self had no permanent "I," but were a series of detached thoughts, each independent of the rest. Then we have three "I's": the first "I" knows the dots *a* and *b*. But it passes. Another "I" posits *c* and *d*. It also leaves the stage. A third "I" appears and sees : : The third "I" is as unaware of what the former two did as the second was of the action of the first. How then can a judgment arise? How can knowledge come into being? If even such a brief process requires a continuing mind, how much more evident this is in the lengthy process by which the moon's orbit is determined. This point need not be laboured. When Kant's critique rescued knowledge from the scepticism of Hume, his assertion of the indispensableness of the self for knowledge was not the least of his services. And yet one cannot consent to Kant's view that the "I" is "a transcendental subject = *x*" of which we can know nothing, except that it is that by which we think.[1] Kant seems to have been misled into this view by his reaction against the "rational" psychology of his time, which professed to furnish *a priori* proof that the soul is a simple, single, spiritual unity and therefore immortal. In the passage quoted, Kant sees in the self nothing except transcendental unity of apperception; that is, the *a priori* unity of self-consciousness. By this *a priori* character he means that which the mind brings to experience as distinguished from that which the mind learns by experience. So far we can follow Kant. In order to be conscious, to think, to know, there must be a mind or subject. A series of disconnected states is evidently insufficient. Knowledge is bringing many diverse things into a unity of thought. Whether one considers a simple truth like 1 + 1 = 2, or a universal law, such as the law of gravitation, or a science,

[1] *Kritik der reinen Vernunft*, Kehrbach's edition, p. 296.

astronomy for instance, the subject of this knowledge is a permanent unity: not necessarily unchanging in all respects, not certainly immortal because it has knowledge, but a permanent unity so long as it has the knowledge, and so far as the possession of this knowledge requires; and even somewhat farther. For knowledge cannot be separated from the preceding data of consciousness, the feelings, out of which it springs, nor from the processes of thinking, nor from the feeling of ignorance in which these processes often terminate. To this extent Kant was right, that the "I" as a unity of consciousness, not brought into being by experience, but itself coming into being to have experience, is a logical necessity. But we need not agree with Kant that nothing is or can be known about this "I". Indeed I am not sure that such was really Kant's meaning. For Kant seems to allow that the "empirical" I, that is, the conscious self of our experience, may be known. Moreover, the very core of Kant's critique is an exposition of the nature and structure of mind, as having sensibility, the forms of time and space, the categories of the understanding, as well as this transcendental unity of apperception. All this, if we can accept it, amounts to no small measure of knowledge of the "I": but this is all *a priori* knowledge; and we are following another road: we are examining experience *a posteriori*, without venturing into the difficult and abstruse *a priori* region. Possibly Kant's intention in the passage referred to is only to deny knowledge of that deductive character exemplified in the "rational" psychology of his day. Assuredly, we have no right to deduce from the fact that the "I" is necessary for knowledge, that the soul is indivisible, incorruptible, immortal. It may be of such a nature; but, if so, the belief must rest upon other grounds.

If, then, we are asked, how, that is, by what means, in what way do you know that there is a self? we can reply—I *feel* myself immediately in self-consciousness, and *know* myself by reflection upon my whole experience. The self is not an assumption, not a mere logical presupposition, necessary *a priori* for knowledge; but the given reality of the living being known in personal experience—the one permanent

datum of consciousness, to which all the separate and transient data are given, and in which these data are apprehended, so becoming knowledge. As each distinct datum of consciousness is raised into knowledge by the processes of attention, comparison, judgment, classification, so the one constant datum, the conscious subject, is recognised by its permanence amid the innumerable variations of experience, and is marked off from all these diverse particulars by its uniqueness. The self is an individual, not a class. The isolation of the conscious subject differentiates it from all else ; my consciousness is mine alone, no other man can enter into its experience ; the consciousness of other human beings is to me a mental imagination, of which I have certain knowledge and belief, but *no consciousness*. The self is thus not only a consciousness, and a self-consciousness, but also to some extent a self-knowledge. Within the limits of experience, much valuable self-knowledge is possible : but here, at the outset, we need only insist upon this one fact : the self is known as a real existence, a real living being, which knows, and wills, and acts ; which is the subject and the agent in a developing experience.

The second question—*what* do we know of the self? belongs rather to psychology than to an inquiry into the nature of knowledge. Our inquiry can proceed when we possess the certainty that the self *is*, and that it is the knower. For the rest, we are well aware that self-knowledge, like all other branches of knowledge, is imperfect, attended by the inevitable shadow of ignorance, and liable to the intrusion of error. That I exist, that I am conscious, that I have some certain knowledge, is ground enough to serve as basis for our investigation. Upon this we might take our stand without further remark, were it not advisable, after firmly asserting the certitude of the self, to point out that, nevertheless, *we do not know what the self is :* we know self, and much about the self, but ultimately the self is an unexplained mystery.

For instance, it is a popular belief that the self is a mind, soul, or spirit dwelling in the body as a man dwells in his house, or an oyster in its shell. But we do not know this, and have no right to assume anything of the kind. Of course mind

and body are obviously distinguishable ; and that the body is, as it were, dwelling-place, and apparatus, or machinery, from which the spirit *may be* essentially independent, is not a ridiculous theory. But, at best, it is no more than a theory. Meantime we who require certainties for the foundation of our knowledge, have nothing to do with such theories. The certainty we have is a human self, not a bodiless spirit, but a man—of body and soul consisting. *Mens sana in corpore sano* is the ideal human self. Nevertheless the corporeal and the spiritual sides of the self are demonstrably not on an equality. The body can suffer loss of some parts, while the mind retains unimpaired vitality and power. Milton in his blindness knew "his soul more bent, to serve therewith his Maker" : and composed his *Paradise Lost* in total darkness. Deaf Beethoven continued to produce music. No doubt, some parts of the body are indispensable to life, and therefore to the human mind as we know it. The brain has been regarded as the seat of mind, or even as the mind. This view, however, is open to the objection that the brain needs the blood for its activity. The bodily life, and not the brain separately considered, is the corporeal factor in the dual self of which we are certain : but whether the body is only the means by which the spirit comes to a knowledge of itself and the external world, or more than this, we cannot say.

CHAPTER IV.

OTHER SELVES.

OTHER men are like me, of the same general type. This is a fundamental truth upon which our knowledge is built up. Without this indispensable basis, common knowledge, the sciences, ethics and philosophy could not exist. Even in such simple and immediately personal affairs as particular sensations, when these are named and classified so as to become matter of knowledge, confirmation by the parallel interpretation by other men of their like sensations in similar circumstances is needed to make one's own perceptions certain. "Is this a dagger that I see before me?" Yes: if you and other bystanders also see it when you look in the same direction. But if you all agree that you do not see the dagger, I am compelled to suspect that I am suffering from hallucination. We need not, however, labour at this point; for, as a fact, all sane men do believe in the existence of other men like themselves. All are alike in one respect; each one is aware that he is liable to make mistakes, and feels more sure of his own perceptions and judgments when these are supported by the similar perceptions and judgments of another, or others, and most sure when they are confirmed by universal assent. Practically there is no difficulty in the case of this certitude. Its meaning is clear, its reality is undoubted. We have nothing to do, but to explain why it is here exhibited as a certitude distinct from the former certitude which was set forth in the preceding chapter, and why it is asserted to be a *fundamental* certitude.

The distinction between self and other selves has received comparatively little attention. Generally it is taken for granted without so much as a mention of its existence. This fact illustrates the strength of the certitude. The age-long

controversies of philosophers have been on two fields, that of the self, and that of the external material universe: on these the two great divisions of the philosophers who are not sceptics have pitched their camps, whence they have issued forth to assail each others' positions. All the time other selves have been equally acknowledged and appealed to as umpires, both by idealists and by realists. The disputants argue as though the contest lay between *the* human mind and the material world—ignoring the fact that if the material world may perhaps be reasonably regarded as a unity, *the* human mind, as a solitary being existing alone over against the world, is a fiction; the actual fact being a multitude of human minds intercommunicating their thoughts together. The philosophers would not so argue if it were not that both sides are in perfect agreement as to the existence of many human minds, and that these many minds have one common nature. The universal acceptance of the certitude of other selves is thereby demonstrated. But it by no means follows that the distinction between the two certitudes of self and of other selves is unimportant, and needs no separate consideration. On the contrary, the proverbial inconclusiveness of philosophical controversy rather suggests that possibly inattention to this neglected point may be a partial cause of the philosophical failure to come to an agreement.

The distinctive character of the self is its individuality, its uniqueness. In each separate experience it is a unit without a fellow. Whatever be the ultimate nature of the self, it is at least certain that consciousness, experience and knowledge *belong* to the self in a unique way. My experience is mine, and that of all other men is inaccessible to me, though indirectly I come to know that they have like experiences. To each of us *the* self is *my* self. Other selves are inferences of reason, not objects of consciousness. Professor Clifford proposed on this account to call other selves *ejects* instead of *objects*: but the coinage of a new term is hardly necessary. As the self is object of thought to the self, so other selves are objects of thought also, and, in a way, objects of sensation, that is, so far as their bodies are concerned. The distinction of other selves from the self is that their conscious-

ness and knowledge are *to me* matters of inference, not of immediate *feeling*. That they have a self-hood similar to his own, each one of us firmly believes; but this belief is not founded upon direct contact with their self-hood, but upon intermediate signs, such as speech, gestures, movements, actions, which indicate sentience, thought and will. The visible sensations of form and colour which indicate a human body, the soft flesh and smooth skin felt by touch, the hearing of the mere sound of speech, the observation of motions and actions, contain nothing to suggest the idea of another self: just as the sight of one's own arms and legs, and of the reflection of one's face in a mirror, contain nothing which could account for the idea of one's own self. These external sensations of one's own body are in character the same as the external sensations which each one has of other bodies, human, animal, vegetable and inorganic. The painter's art can imitate some of them for the eye, the sculptor's can imitate the form occupying space, and machinery can be employed to give motion to such a form. The perfect imitation of a man's appearance and movements by art and machinery is conceivable: but the wax-figure would have no soul. And all that we see and hear and observe of real men and women would never lead us to recognise them as living souls or selves, if we had not, each of us, the internal and incommunicable experience of our own living soul, the self. The wriggling of a wounded worm suggests to me its sentience, because I am sentient, and writhe under torture. The sound of human speech suggests mind to me, because I think and speak in words. Self is the key by which we interpret all the sign-language outside. The one self only is immediately known: all the other selves are inferences of reason. The distinction is not a slight one, to be slurred over, or left out of sight, in our attempt to understand knowledge and reality. On the contrary, it is profound, immense, and carries the thinking mind towards great issues, whither we must not follow in this chapter. At present it is enough to call attention to the distinction. We have the certitude of self, which is in a way the origin and source of all certitude; we have the certitude of other selves, different

in kind, but not less certain, and full of significance: these are two, and to confuse them together is untrue to the facts, and a serious loss to our reasoning: we have also the certitude of external things to be hereafter considered.

This scheme of three fundamental certitudes, or, as I prefer to say, of one fundamental certitude involving three distinctions, is obviously open to the objection that one of the three, that which we are now considering, is an inference from the self, and being an inference, it cannot legitimately hold the place assigned to it: a certitude it is, but being an inference, how can it be fundamental? This is no captious cavil, but an objection which naturally occurs to the honest thinker. What then are we to do? Shall we amend our scheme, and say we have two *fundamental* certitudes and one *derived* certitude? The amended statement would not deprive us of any of the certitudes, but would alter their arrangement. The self and the world would be the basement, and the other selves the first row of stones laid thereon. We should still have all three at the basis of our knowledge. We must not act arbitrarily, for our mere convenience. The question is—which mode of statement corresponds to the facts as we are conscious of them? If I adhere to the statement first propounded, it is because it seems to me to express the facts of our consciousness; and I say this, though not insensible to the difficulty which the objection points out.

The difficulty will disappear, I think, if we return to our starting point. That starting point is not the starting point of psychology. The business of psychology is to study the genesis and history of the self. We may take it as biological fact that the self as a living being emerged from other selves, that the babe was begotten and born of father and mother, that the babe at first had apparently an animal state of being only—bare sentience, without any manifestation of mind. Consciousness appeared first as mere feeling, and by degrees mind emerged, first as perceiving, and gradually evolving until the adult stage was reached. In psychology, so much is uncontested. Our starting point is from the adult stage, from the actual possession of knowledge. We are quite willing to look back, to use our memories, and to admit into

our inquiry any certitudes which memory contains; but we cannot go back to the earliest period, the dim and vague region of early feeling in which knowledge did not yet exist, but was being prepared for. We can only begin with the period of clear and sure knowledge: for it is this which is the subject-matter of our inquiry, and this, too, is the implement we have to use in the inquiry. We must therefore begin with certitudes, because nothing short of certitude is of use for our work. Even if we were to apply to psychology for a solution of our difficulty, it could give none: for whether the self, or the not-self, or some other self, is first consciously perceived and known as such, psychology has not succeeded in discerning. There is an agreement as to the original confused mass of feeling which does not differentiate between self and other: but after that, agreement ceases: some think that things are first perceived, others that persons are first noticed. It is a rather general opinion that the child's earliest notion of things puts something of itself into them, attributes its life and activity to inanimate objects. Also it is a frequent remark that the child is tardy in speaking of himself as "I": and seems to have acquired a notion of himself as one among others before he asserts his unique individuality. Psychology is uncertain about the order in which self, the world and other selves are recognised. We are obliged, therefore, to leave that early stage out of account: and to begin with man as a full-grown thinking and reasoning being, who having knowledge, certitude and belief, inquires into their nature and value. At our starting point the three certitudes are all indubitably present and fundamental, however they were originally acquired. For us, they are given certitudes, not necessarily given in the early undifferentiated stage of consciousness, but given by natural evolution from that stage.

We shall be confirmed in our adhesion to this threefold scheme when we have considered the third certitude—that of a real external world, and the unity and mutual dependence of all the three certitudes. And perhaps the solution of the present difficulty lies just here, in the fact that the historical order of being, and the logical order of human thought, need

not necessarily coincide. In the first year of the babe's existence, it has, we suppose, a vague mass of confused feelings; but at that very time the distinct realities of self and other selves and external objects are all in existence around the child; and the child is a little speck of life, having, we may say, the *germs* of these certitudes within him—which is a figurative way of expressing our belief that, if he lives, he will in due course possess them. Historically, other selves and the world precede the child: even if in the individual consciousness of the child the self precedes the other certitudes—of which, however, we are by no means sure. Again, on the wider scale of world-evolution, inorganic matter and forces appear to precede organisms and sentience in order of time; but in order of thought it is not so: it is impossible to extract thought out of inorganic matter, or to build thought up on a basis of mere inorganic data. Knowledge at the very lowest begins with sensations; and a sentient being is required for sensations. As for the whole inorganic world of matter and motion, it is non-existent for us, except as known through our sensations.

The fact that the certitude of other selves is the result of a process of inference is perhaps not so distinctive as at first sight it seems to be. Now, in the developed consciousness and knowledge of adult life, the self appears in our experience as immediately known in consciousness; and we distinctly perceive that we have no such immediate consciousness of other selves. But it is generally supposed that the primitive stage was one of confused undifferentiated feeling. In any case, the self-certitude somehow began; and it is hard to imagine any way in which it could begin in which some process of inference was not employed. Inference is the mind's natural tool; and if by inference some portion of experience is marked off as not-self, and another portion as other selves, then inference may have also had a share in creating the certitude of the self. Without inference it is difficult to see how an external world can be a certitude. On the whole, then, this inferential character of the other selves does not seem a sufficient reason for disturbing the arrangement of our certitudes. As a matter of fact we have them

all three together; and all three lie at the basis of all our knowledge. For us the order of their appearance, and the exact character of their mutual dependence, is less important than the general fact that we have them, that they are together, and are mutually dependent.

CHAPTER V.

THE EXTERNAL WORLD.

WE all believe that there is a real external world outside ourselves. Some philosophers, indeed, dissociate themselves from this universal belief; but at present we are giving utterance to the universal common-sense of mankind, which those philosophers also possess, and act upon in all practical affairs, whatever view they take of it in their philosophical reflections. What do we mean when we speak of this real world as *external?* Externality is a spatial term, implying an inside as well as an outside. When we speak of a world "outside ourselves," the self referred to is the mind. Is the mind, then, a small space inside a larger space, called the world? This is not the meaning. The general belief is that the mind is not spatial, although it can perceive and think space. Into the difficult discussion respecting the nature of space we need not enter now: for the discussion is quite unknown to the great majority of mankind, and the universal belief in the external world is not dependent upon it. Our business is to consider the certainty which all men have of the existence of the external world, and the meaning of this certainty.

The use of the word "external" in this connection originated doubtless in the common mode of thought, in which we all are in the habit of regarding our bodies as part of ourselves. My body occupies space; I inhabit my body, and look out through my eyes as windows and contemplate earth, sea and sky, the world of real things, lying out there in space outside my body. My earliest observations were of those external things, and almost every moment of my life those things more or less engage my attention. On the whole, external things occupy by far the greater part of the thoughts

and activities of the great majority of mankind: and thus the larger part is put for the whole; and men speak of the "external" world when they do not mean *only* such external things, and even of these actually external things, it is not chiefly, or even not at all, the spatial externality which dominates the meaning.

For while the greater number and bulk of these things are spatially external to the body, it is only to one individual body, my own. The bodies of all other men are in my external world; and my body is in their external world. Moreover, the two great characteristics of external things are that they are visible and tangible. Now my own body is partly visible and tangible to myself, and I have no doubt it is visible and tangible on all sides to other men, as their bodies are to me. Consequently, these bodies are all regarded as immersed in and belonging to the "external" world; and thus we readily drop the word external, and speak of the real world, the material world, or, in one word, of "nature," or "the universe"; although the term the external world still maintains its ground, and is perhaps as convenient as any other. Because, when we probe the matter to the bottom, we discover that it is not spatial externality which we mean, but externality *to the mind*—which seems a contradiction, the mind not being spatial. By externality to the mind, we really mean that these external things exist *independently of the mind;* that is, that the mind did not produce them, does not sustain them in being; that the removal of our attention, our ceasing to be conscious of them, does not affect their existence in any way. To the idealistic philosopher this, of course, is rank heresy or arrant nonsense—and in due course we must give him our respectful attention. But that this is the certitude of the natural man is beyond dispute. The dagger which I see is a real dagger if others also see it, and if we can grasp it in our hands; but it is not a real dagger if the moment we all go out of the room the dagger ceases to be. What we believe in is *real* things; and by real things we mean *permanent* things; things which do not come into being and go out of being as the sensations come and go in our consciousness. We are all realists by nature. Into the metaphysical

dispute we are not entering, and decline to listen to it at this moment. What we have before us is the common-sense certainty that Sir Christopher Wren built St. Paul's; that the Alps existed in Hannibal's time; that there was an eighteenth century before the nineteenth, when the world and its contents existed, though not one of us was yet born. This is what is meant by the "real external world": it is the reality of objects, of those things which are *given* to consciousness, and are the earliest interpretations of knowledge.

While we use this phrase the external world, we must be careful not to put more meaning into it than the certitude actually contains. Perhaps it would be better to say "the world of real things," or even "real things" only; for a "world" suggests a whole and a unity, but our certitude does not reach so far as that. What we have is the certitude that there are a multitude of real things, some of them permanent, most of them changing. We do not know their number, nor the extent of the space they occupy, nor that all of them are united in one system under one law. The certainty that we have as the basis of our knowledge of things is that things exist; that they affect us; but are also independent of us, and are not mere changes of our personal being. The only immediately evident bond of union among them is their juxtaposition in space. Therefore when we speak of a "world" of real things, this means no more than an indefinite number of things, held together we know not how, imperfectly understood, and moved by unknown forces. What is meant by "an ordered world," "a reign of law," is the conception of later knowledge—not an original and fundamental certitude.

The former two certitudes were of the subjects of knowledge; this is the certitude of the *object*. It is the original certitude of the primitive consciousness, namely, that "something is," ratified and expanded by the constant experience of a lifetime. For periods varying from, say, twenty to seventy years, we have all of us been daily, hourly, continuously, in contact with innumerable objects of an incalculable variety of forms, in an incalculable variety of combinations; and all these we have found "real objects". In some cases we could not tell what they were—even experts in physical

science are sometimes baffled ; but the net result of this long experience of all of us is that we are certain that we have to do with real things in a real world. Just try to imagine yourself living in a world of unrealities—where water would at one moment quench thirst, and the next moment set one on fire ; where every appearance would be ambiguous, and no one could count with certainty upon anything. A world of chaos, if there could be such a world, surely could have no intelligent minds in it, or it would soon drive them into idiocy. But our world is a world of *real* things ; we are quite certain of that. It is a world of things *given* to us, as it was *given* to our forefathers before us ; it is a steadfast, trustworthy world, in which it has become a maxim that "nature never deceives". This certitude of real things is the foundation upon which all our science is built.

As to the origin of this certitude, it begins with the consciousness that "something is" ; which is given fact, and comes as such without any fringe of doubt attaching to it. *What* it is we know not at first, but *that* it is we are sure. It is *something*. The assertion of this precedes the question, what ? Knowledge gives a character, a classification, a name, to the something ; affirms it to be a tree, or a lion, or a metal, or a cloud. Innumerable interpretations of this kind arise and are established. We occasionally make mistakes, and amend our interpretations. The things do not make mistakes. Unreality is never discovered in things. Though we sometimes complain of things as unreal, as not being what they were taken for, on reflection we attribute the unreality not to the things but to our misapprehension of them. The certitude of objects is *given* to us ; we do not make it, but find it in the things as they come to us. In the full tide of advancing science this certainty of the object-world is to many minds the strongest of all. Self appears to be capable of illusion ; nature is found to be immaculate and inflexible in its fidelity to law and order. If the scient[1] in his exaltation of the third certitude to the disparagement of the other two

[1] Permit the word. We have in English *nescient* and *prescient:* why not *scient* as a noun, as the French use *savant ?*

goes to an extreme, the very excess of his confidence in the object is a sign of the perfect sureness of its certitude.

The question whether this certitude of the real things precedes the other certitudes in order of time cannot be positively determined. If one were searching for some one epoch or event, which was the occasion of the child's first obtaining a clear and firm conviction of the reality of things, it seems likely to have been an event which also, at the same time, revealed to the young intelligence the fact that this world is also the world of self and other selves. Two boys fighting for an apple, or amicably sharing it in alternate bites, could hardly fail to receive a strong impression that the apple was outside both of them, and also an impression equally indubitable that self was there face to face with another self. Moreover, our certainty of the external world is not an original evolution in us as individuals. Our fathers and mothers had it before us. Every time they said to us "let that alone," "go and fetch something for me," "here is a pretty thing I have got for you," they were instilling their certainty of the external world into our minds ; and also, at the same time, impressing upon us the certainty of their personal existence. How far we owe our first recognition of the external world to our own sensations and experiments and to judgments founded thereon, and how far it was due to the influence of other minds upon ours, it is not easy to ascertain. For our inquiry into knowledge this point is unimportant. The one great fact is that the certainty of the external world is given to us.

CHAPTER VI.

THE UNITY AND MUTUAL DEPENDENCE OF THE THREE CERTITUDES.

THE human mind is formed for truth and craves truth; nevertheless its own prejudices and negligence are chief causes of its lapse into error. In our thinking, attention and abstraction are useful and indeed indispensable; they are tools without which the mind could accomplish nothing. Both, however, involve temporary departure from the reality; attention alters our perception of its proportions, one part being made prominent and important at the expense of other parts; abstraction increases the departure from reality by singling out some fragment of a whole and thinking of it as a separate thing. Thus mental activity opens a door to erroneous conceptions, which may become established through repetition and negligence. If on each occasion the mind returned from its momentary attention and abstraction to a careful survey of the whole reality as it is, so as to maintain constantly a right proportion of our thoughts, the evil might be avoided or diminished. In fact, however, we are almost always biassed by having some practical end in view. If we get thoughts which guide us to this end, these are cherished; while other thoughts, not of immediate practical value, are neglected and allowed to drop into oblivion. In this separateness of things, for instance, it is their separation from other things which makes it easy to observe them, to define them and to use them. I have here some sovereigns. To me they are interesting and valuable in their numerical individuality. With half a dozen of these little round discs in my pocket, I can procure conveyance for hundreds of miles, dinners, beds, and, in a word, supply my bodily wants for some days. As to their separateness, it is no mere fancy.

When I lay them on the table, to the eye they occupy distinct spaces—to the hand, they are distinct feelings as I take them up one by one; I put them in a pile, they do not stick together; I let them fall, they roll in different directions; finally, I can use each one for a separate purpose. This separateness is a fact; and there is no error in my thinking it. On the other hand, there is error if I regard this separateness as absolute; or if, without going so far, I habitually overlook the complementary fact which is also as real as the separateness, and thus continually abide in a one-sided view. The complementary fact is the oneness of all the sovereigns with each other and with other things. The metal gold is one kind; wood is of many kinds: deal, oak, beech, etc.; stone is of many kinds; gold is one—a chemical ultimate or element. This unity of chemical character is for science the most important aspect of the fact. Then, physically, gold is one with the whole mass of what is called matter. Each sovereign is bound by an invisible but indissoluble bond with the whole material world of things; if you drop the sovereign, it falls—there is mutual attraction between it and the earth; every day the sovereign travels many thousand miles in space; it is not at this moment where it was a minute ago, though I perceive no motion; it has moved with the earth round the earth's axis, and round the sun, and with the solar system. Thus physically our separate sovereign is seen to be not separate but united to the whole physical reality. Consider further whose image and superscription it bears. As a thing coined in a mint, it is united to man, to his labour, his science and art, his wishes and uses; as made under order of the Government, it is united by human law to all other sovereigns, all are of the same weight and the same value. Again, it is united to man as an object of his desire, and an instrument of effecting its designs; and it also unites men together. To get possession of it other men will work for me, run for me, be for a time my servants. These round bits of yellow metal, separate as they seem, are bound together by the whole world of men and things, and help to bind it together. And this truth, seen by us in the one illustration momentarily selected, may

be seen in every person, every thing, every thought, every quality of every thing. To assert that there is nothing of any kind anywhere which is wholly and absolutely separate and independent would be dogma rather than knowledge. What we must assert is that so far as our knowledge goes we can detect no exception to the rule. The notion of separate things is a one-sided notion—true if taken as only one side of the matter ; if it prevails so as to exclude the other side it becomes error.

We have been asserting three fundamental certitudes which underlie knowledge and are its data. These are certitudes of distinct or separate realities. Self, other selves, and the world of things stand out one from another with clear and strong marks of independence. In human thought the discernment of likeness and difference is natural and necessary. We cannot help perceiving distinctions—without such perceptions there would be no thought, no knowledge. But if we in thought make these distinctions absolute, if we wholly overlook the unity which underlies and supports the distinctions, we lose the reality and live in a world of fictions. This, I suppose, is *the* error of what is called common sense, which philosophy perpetually tries to correct. In practical affairs we all are more or less under its sway, and unless we are vigilant its influence increases to a degree which leads to serious error. Having considered the certitudes separately, and sufficiently recognised their independence, it is also an imperative duty to consider and insist upon their unity.

We have been speaking of certitudes. Certitude as a feeling, or state of consciousness, is one. Looking outside, the certitude is felt in respect to this or to that; but looking within, the feeling is certitude, distinguishable from its opposite, incertitude or doubt, distinguishable from probability, which is an approximation towards certitude, but not distinguishable from itself. We speak of being sure and quite sure, certain and positively certain—expressions which point to degrees of intensity in the feeling, or to some feeling of inability to mark off certitude from a high degree of probability. But certitude as a feeling discloses no internal differences. When we speak of pure gold, we do not mean

something different from gold, but gold without any admixture or alloy. So certitude is certitude, whether of self, or other selves, or the world of things. If we describe it as that feeling which the mind has in the perception, or knowledge, or belief, of its own true or supposed accord with reality, it is the same feeling whatever part or aspect of reality it refers to. Upon reflection this feeling seems to me a unity in my consciousness. When I walk along the road and feel certain that the solid ground supports and will continue to support my weight—that the things I see around are houses, trees, horses—that the men and women I pass are selves as I am a self—this compound certitude has distinguishable contents, but the certitude as a feeling appears to me one whole. As immediate consciousness is a unity containing diverse elements, and continuous consciousness or conscious experience is a unity in which past and present are united by memory, so certitude is a unity—not a fixed, dead, immutable unity, but, like the self, a living unity capable of change and growth : yet in all its changes and expansion it is one.

Knowledge, as distinguished from feeling, is the intellectual apprehension and affirmation of reality. Certitude as knowledge, or the certitude of knowledge, also is a unity. To know is to know, whether the known is the existence of self, or that of other selves, or some part of the world of things, or an abstract truth of mathematics. However many and diverse the objects of knowledge, the unity of knowing is unbroken. Opposites and contradictions are embraced in the same act of knowing : "this is right," "that is wrong," "this proposition is true," "its contradictory is false"; knowing grasps such thoughts in the same way, holding opposites in view at the same time.

Reality as one whole self-consistent system is neither apprehended in consciousness nor comprehended by knowledge. So far as we can think and speak of it, it is an ideal : a goal towards which we strive, a conclusion which may be anticipated by faith, and from that point of view may be a certitude ; but to pretend to know it would be presumptuous. Our knowledge of those parts of reality, however, which are known, as are the three fundamental certitudes, agrees with

this final synthesis, on condition that we pay attention to their mutual relations. If we wilfully or carelessly disregard this side of the truth, of course it is invisible to us. As by habitual attention to one side and neglect of the other, a man may come to think of sovereigns solely as tokens of power over other men, power to get food and clothing, horses and pictures, rank and admiration, and may thus wholly lose sight of sovereigns as bits of physical reality, so it is quite possible for him so to think of himself and other selves that nothing but the distinction is present to his mind. Wholly governed by self-interest, other selves may appear to him divisible into his tools, and his rivals, and those to whom he is indifferent ; the world of things may be to him nothing more than an immense variety of material, of which part is agreeable to his likings, part disagreeable, and part indifferent. Even in such an extreme case, we, as spectators of the man and his behaviour, discern that for his mind there is a unity running through things : they are related to him, as favouring or opposing his interests. Apart from such immoral selfishness, mere want of thought, or absorption of thought in one direction, may blind one to the unity. A scient may be so fascinated by the wonderful spectacle of the mechanical aspect of the universe, so absorbed in the search for mechanical causes and connections, that he may lose sight of himself, and reason about the physical world as though he knew it apart from mind. The metaphysician, intent only upon consciousness and thought, may reason himself into a philosophical opinion that there is no real world of things. If we want to know reality, we must perpetually correct our onesidedness by determined effort to look all around.

A man speaks and thinks of himself, and may be supposed to have some meaning in his mind, more or less exact and complete. Hume thought himself a mere bundle of sensations and perceptions with no uniting bond : and therefore denied that there is any self. This very denial gives one a glimpse of a notion of self as something which, if real, ought to be perceptible *by itself* apart from anything and everything else. Now to discover such a self is admittedly difficult or impossible. Observe here, that this difficulty or impossibility

proves that the actual concrete self which we know or believe is not an existence wholly distinct from other selves and things, but, on the contrary, so connected with them that we cannot discover the self in total isolation. And if we could, what, on the hypothesis, should we discern? Something like Locke's sheet of white paper, or like the total unconsciousness of sound sleep which to Hume seemed the fellow of death? A self wholly isolated from other selves and the universe cannot even be imagined, except perhaps as an inert germ or latent possibility in a new-born babe : a self not yet awakened into life. The actual concrete self is in fact *rooted* in the universe by a thousand fibres, and deriving its nourishment from the universe by a million cells. Or, we may call it a parasite, living within a living universe, drawing its life-blood, and building up its own existence by extracting living material from the universe. Take away other selves, and all the emotional, moral and social part of myself disappears with them. Take away the world of things, and all my sensations and my science vanish. If we can at all imagine an isolated self in existence, it is only on condition that it has lived such a life as ours—a life of experience of relations with others and the world. Imagining a self thus filled with the contents of a past experience retained by memory, we can imagine it living the past over again in memory, rejoicing or sorrowing, or working out mental problems of "might have beens". But this is not imagining a really isolated self; for the past relations are all that give a continued existence to that self, without them it is even for our imaginations an empty nothing. Self, then, if only we will think of our own meaning of it, is not a distinct being, wholly separate from and independent of other things and beings, but really bound up with them by indissoluble bonds. Self is no more thinkable apart from other selves and the world of things than a mass of matter is thinkable without space.

The certitude of other selves is plainly one with that of self. We know others through self-knowledge. At the same time other selves are also regarded as part of the world of things. Thus, as each man is by his body sensibly united to the world of things, so other men have two sides—one link-

ing them to the self, the other to the external world. The character of this certitude as part of a tri-unity, one certitude including three distinctions, is evident.

The certitude of the world of things differs from that of self and the other selves in an important respect. The certitude of self is given as a unity—that of other selves as an indefinite number of similar unities; the certitude of the world of things is given in many certitudes of particular things—it is not given in consciousness and knowledge as a unity. This must be explained. In the certitude of self, what we have is just that one certitude of a single self, having indeed many states and powers; but none of these is given in isolation from the self. The self appears as a unity and in no other way. In metaphorical language we speak of being "torn asunder" by conflicting emotions or desires; of being in "two minds" in respect to something; of a better self striving against a worse. All this language however is, when translated into plain prose, an expression of the self as a unity containing diversities, which diversities strive together within the unity, but never divide it into two or more separate beings. As we cannot even imagine a human body in two places at once, nor dividing itself so that one half shall be in London while the other half is in Paris, so we cannot even imagine a self actually separated into two, so that one portion, say the sensuous side, shall be utterly cut off from the intellectual or spiritual side. Before the two halves of the body can be in the two cities, the man must be killed and the living body cease to be. Two halves of a body are not a body, not even parts of a body: what constitutes the body is the life which unites it. While the life remains, it is still a body though mutilated and imperfect. But a corpse is a different thing altogether. So the self is the unity, and apart from the unity we have neither consciousness nor perception, nor conception nor imagination, of the self. But if we turn to the world of things, the experience is reversed. Things come to us in their separate individuality; the mind perceives them, attains to the certitude of their reality, before it conceives the unity of all things in one world. Probably the great majority of the human race to this day have no conception of this

unity. The diversities strike upon our attention and cannot be overlooked. The underlying unity cannot be perceived: it can only be conceived and believed: and this not without difficulty. The succession of the seasons becomes a unity when it is connected with the visible position of the sun in the sky, or with the annual revolution of the earth. The changes of the weather, in England at least, seem uncertain and capricious. Where and what is its unity? Two impulses lead the mind to extend its certitude beyond the range of experience, and to believe in the unity of all things in one orderly universe: these impulses are religion and science. Religion ascribes the whole to one Author: science imagines one homogeneous matter moving in accordance with one universal rule. In both the mind passes beyond the certitude actually given in experience—whether rightly or wrongly we do not consider in this place. But for an inquiry into the nature and validity of knowledge the observation of the fact that we do not immediately perceive the world as a unity is of essential importance. There is a fatal fallacy in the very core of all reasoning which overlooks this truth. Our certitude of a "world of things" is primarily a certitude of the existence of many diverse things connected together in one way—in another disconnected. The unity which binds all perceived things together is the perceiving mind: so far as they affect consciousness and enter into knowledge, they are united by being objects of one consciousness and knowledge. But consciousness is fragmentary and intermittent: things are permanent and are more than we perceive. We have knowledge about things; we do not know things wholly and completely so as to know that there is nothing in them left unknown. On the contrary, ordinary and scientific knowledge alike feel and confess ignorance of the inner and ultimate nature of things. This relation of things to the self does not suffice to unify them, because things are to some extent and in some way independent of this relation. No man knows all things: every one of us knows that he does not know all things: every one of us knows that he does not know any one thing perfectly. Relation to self does not give us a certitude of all things existing as one system, a unity of diversities.

The given fundamental certitude is that "things exist"; these things exist in infinite number and variety, but not in total isolation. They are all united in one space and time; they are united by resemblances into many groups; these groups are again united into groups of groups; what are called "natural laws" seem to pervade the whole and suggest an ultimate unity. Whenever any particular thing is analysed it is always discovered to be related to other things. If our certitude of unity is not perfect, at all events there is no known exception. In consequence of this universal tendency towards unity, a strong persuasion of an ultimate unity binding all things together arises in the minds of all who devote themselves to the study of the physical universe. And as this scientific belief is diffused by the progress of education, the conception of one orderly all-embracing system of things becomes familiar to thinkers generally. Yet we must not confound this persuasion or belief of the scients and the educated with the primitive certitude possessed by all men. This primitive certitude is that things independent of the self, exist on the earth, and in the earth, in the sea, and in the sky, which altogether may be called the world. Of this fact all men are assured, and, I suppose, have been assured from the Early Stone Age to the present day. That this original certitude of things is not to be identified with the latest scientific or philosophical conception of the universe is evident; because, while the primitive feeling is universal and the immense majority of mankind cannot even imagine the possibility of its being doubted, the notion of one all-embracing system of the universe is the ideal towards which science and philosophy are ever striving, but hitherto have never attained.

The certitude of things is so evidently one with the certitude of self that it has been possible for some to deny the separate existence of things. The "subjective-idealists" regard things as existing indeed, but only as modifications of the subject or self. There are even scients who tell us that things are groups of sensations, and nothing more. J. S. Mill defined things as "permanent possibilities of sensation"—a phrase not easily intelligible. All these peculiarities are testimonies to the oneness of the certitude of things with that

of the self. They are based on the fact that we are conscious of things by our sensations; that we know things by our perceptions and judgments. The sensations and perceptions are the points of contact where self and things meet. The sensation and the perception are a unity—are one impression with its sensuous and its intellectual side. No doubt, if we never got beyond sensations and perceptions, if we formed no judgments, if we were ignorant of other selves, if we could not bring the past into the present by memory, then, in the bare sensation and perception we should have no knowledge of things, and all the external world would appear to be only changes in our own consciousness. When the mind has done its work and attained to the knowledge of things, it is possible on the one hand to overlook the process and to see only the result: and thus the uneducated put things altogether outside themselves as quite disconnected. The great philosopher Locke could regard sensations and perceptions as the only objects of knowledge; making them a sort of emanation from, or reflection of, outside things unreachable by the mind. On the other hand, it is possible to fix the mind on the process so as to lose sight of the result: thus we have things turned into mere ideas, or groups of sensations. The errors on both sides counteract each other, and demonstrate the meeting of the self and the thing in that consciousness which we call a sensation. A thing is not a "thing-in-itself"; it is a thing for us as we perceive it in sensation and by knowledge. A self is not an isolated, unrelated being, but a being in a world of things, by its contact with which it comes to know itself. But, as we have observed before, this opposition of "self" to "not-self" is not the whole truth; it required the certitude of other selves also to bring into the full daylight of our conscious intelligence the real world in which we live, and in which we are a part of the whole.

Already, in discussing the certitudes separately, their mutual interdependence has been repeatedly brought under our notice; but it is of such importance that special attention must be given to it. So far as knowledge goes, and imagination can go, no one of the three certitudes exists, or could exist, except by cause of the other two. The individual self

as felt and known is actually a being self-contrasted with the world of things, and distinguished from other selves. A purely abstract and wholly isolated human self is unimaginable. The actual self finds itself, its own being, in its consciousness of itself as being other than the "things" which it sees and handles, on which it acts, and by which it is affected. At the same time, it also finds its own being in its relations to other selves whom it fears or loves, in agreement with whom its knowledge of the world of things is built up, apart from whom it possibly would never be able to attain a clear and sure knowledge that there is a world of things. Other selves are only recognisable by a conscious self: without this inward perception of one's own self there would be no reason for distinguishing other men from the animals. Language is a sign, as it is a result, of the mutual interdependence of self and other selves. Some glimmerings of thought may precede language; but for what we call *knowledge*, language is, apparently, indispensable. We think in language; and language is not the production of a self, but of the selves. The world of things, as we are conscious of and know it, is something of which *we* are conscious, through sensations and perceptions, and which becomes for us a real world outside of our individuality by means of our mental operations. Our reasoning conducts us to the belief that the world of things existed before man appeared upon the scene, but of what that world *is* apart from human perception we have not the faintest imagination. We may be certain that something existed before man came into being, just as I am at this moment certain that the side of the room behind my back exists now, though I do not see it nor hear it nor feel it. In both cases I can only think of the world of things which lies outside my consciousness as like that which is present to my consciousness. Whether we think of an island in the Pacific whereon foot of man never trod, whereon eye of man never gazed, or of the fire-mist floating in space which in after æons became this earth, we can only think of such things as we imagine that they would have appeared to a human spectator had one been there. The external universe is only known to us, only certain for us, by means of, and as related to, our own

minds. Thus we see that the three certitudes are bound up one with another as mutually causes and effects of each other: each one necessary to the other two: none able to come into existence apart from the others. We are justified therefore in regarding the three certitudes as being in reality three aspects of one ultimate being.

CHAPTER VII.

THE RELATION OF THE CERTITUDES TO KNOWLEDGE.

KNOWLEDGE, according to the common notion of it, is thinking in agreement with reality; or it may be better to say, the results of thinking, that is, definite mental judgments which correspond to real facts and their relations. There are states of mind, not simply and exactly knowledge, which are allied to or include a measure of knowledge—such as instinct, tact, sagacity, wisdom, understanding. These, in different ways and degrees, fulfil the purpose of knowledge, that is, they guide to right action. If we endeavour to discriminate these, it may help us to a clearer perception of what we mean by knowledge. Instinct is a kind of feeling which supplies the place of knowledge, in so far as it makes us aware of the need of action and impels to the action which corresponds to the need. Tact and sagacity imply the possession of knowledge, and of something more than mere knowledge; namely, of a quick perception of the best way of using the knowledge. Wisdom also refers to the use of knowledge, but with a wider range, and a larger infusion of moral purpose. Understanding and knowledge are nearly synonyms: with a shade of difference in favour of understanding. We know many things which we do not profess to understand: that is, we cannot explain their reasons, or their inner construction, or modes of operation. All these various phases of mental being contain knowledge —unless instinct is an exception; and all may be considered as knowledge in the widest sense of that term. But knowledge, if we distinguish it from everything else, is an intellectual function which deals with *definite* concepts. Bearing in mind the importance of not identifying knowledge with its expression in language, we may yet conveniently use this expression as an indication of the nature or quality of knowledge. When

we have knowledge we say, to ourselves or to others, that we have it: it takes the form of an assertion. The assertion must be an assertion of something about something: thus containing two references. There may be only one uttered word; but there must be more than one concept. At midnight a shout is heard "Fire": nothing but "Fire, Fire": the meaning is "fire *near*, a present danger". So, generally, with or without verbal expression, knowledge implies a concept of something real, and of some state or relation of that something. If I merely name an object—for instance, a "dog"—my attention may for the moment be fixed on that one dog only, but the thought which recognises it as a "dog" refers to the class "dogs" to which it belongs; if I say "sun," I mean the sun which I have known in previous experience, and again see, or expect to see. We may take it as the character of knowledge, that it refers to some real thing or event, in present or past experience, and not with a bare pointing to that thing or event, but as observing and asserting some state or effect or relation of that thing or event.

After this exposition of knowledge, the relations between the certitudes and knowledge are easily discerned. First, the certitudes are not included in knowledge, as knowledge has been defined. The certitudes are *a priori*: they are the active and passive conditions of knowledge: its grounds: its tests. Secondly, knowledge is of particulars, of general rules, but not of the whole. Knowledge is partial, fragmentary, does not profess to be complete, does not attempt to probe things to the bottom, does not try to stretch itself to the utmost limit of thought. I am well aware that these assertions are contrary to a general opinion that knowledge is universal. The major premiss of the most perfect form of syllogism is universal: as in the stock illustration—All men are mortal: Socrates is a man: therefore Socrates is mortal. If you have not got the universal first premiss—they say—you cannot know that Socrates is mortal. Again, it is generally held, or at least it used to be held, that the first principles of all reasoning must be some fundamental axioms of a simple and abstract character. But it seems that these fundamental axioms are not producible. When we examine the actual

facts of experience we discover that knowledge does not rest upon and start from abstract axioms; but from the three certitudes: the self, other selves, and the world of real things.

Lest this departure from the usual view should appear too presumptuous, and even suspicious, let me introduce a word of explanation. It would seem that the treatment of the problem of knowledge by the great logicians and philosophers has been determined by an ideal of knowledge; that is, by a preconceived standard of what knowledge ought to be, of what, indeed, they think it must be, if it is to be true. By knowledge they mean this ideal knowledge. According to our plan of campaign, we carefully avoid beginning with an ideal. Our method is to examine the actual knowledge of common folk. The knowledge of scients and philosophers may be of a superior kind, or merely a higher degree of the same sort of knowledge—that we must consider hereafter. In the meantime, there is a general common-sense knowledge of everyday life, in which all men feel at home, the language of which is intelligible to philosopher and peasant alike. This knowledge, no doubt, is imperfect, falls short of the philosophic and scientific ideal, but it is all the knowledge which the great majority of mankind possess; and all men possess this, including those who lay claim to some better kind of knowledge in addition to this. On this ground we all can meet, and therefore we take this actual knowledge, with all its imperfection, as the knowledge to be examined in the first place. And of this knowledge, we observe, that it rests upon the three certitudes.

The three certitudes are the substratum upon which knowledge rests, but are not themselves included in this knowledge. This may appear a contradiction. How can knowledge begin from, and depend upon, what is nevertheless not within the region of knowledge? It is not our business to avoid difficulties, nor to make things look smooth and easily intelligible, but to get at the facts and to state them as they are. Now in this instance the facts are sure. One has only to think of our ordinary knowledge to perceive that in every case and throughout all its extent these three certitudes underlie it, and that not as a necessary but unperceived

foundation; but, on the contrary, as perceived realities, in respect to which it never enters the knower's mind that doubt is possible. Think of all that the child learns at home and at school; of all the knowledge of the farm, the factory and the market; it is all about things and people, and our relations to them, and theirs to us. Outside of religion, which we leave out of view at present, the whole of ordinary knowledge is concerned with these three certitudes and nothing else. Therefore we say these certitudes are not included in this knowledge. The certitudes are in existence first: they are the grounds of the knowledge. They are the *a priori* conditions without which knowledge cannot begin.

Here, once more, we must insist upon keeping clear of all *genetic* discussion. From some points of view it is most instructive to study how a thing grows, how it is evolved, from what prior conditions it takes its rise. But in studying our knowledge, we have to keep to the known and the certain; and the genesis of knowledge in the child's mind is not known. What we do know is this—that these three certitudes underlie the knowledge which is the result of thinking: not, it may be, in conscious perception, but certainly in actual fact. Even in the case of the babe lying in his cradle watching a sunbeam on the wall, all unconscious of the distinction between subject and object, the self *is*, and around it is the not-self, and many other selves. In the babe the self may be but a germ, an unopened bud; but if the germ were not there, the self could not be developed. Our appeal, however, is not to this undeveloped stage; though this stage is only intelligible on the assumption of the three certitudes. Our appeal is to the consciousness we have of the certitudes in our actual knowledge. Every portion of this knowledge shows the certitudes there beforehand. These certitudes are given in consciousness. You and I have them now. Even the certitude of other selves, which seems to be given indirectly and mediately, nevertheless becomes so sure, that it is practically equivalent to an immediate consciousness. I happen to be alone in this room at the moment, but I know all the time that my fellowmen exist: the tokens of their existence are around me, in these books, in the work of their hands; and in my soul itself

are the marks of their influence. Now, if one will notice the fact, the fact is here to be noticed. The certitudes are observable: two of them always, almost always all three of them are present in every piece and instance of what we call knowledge.

The certitudes are the grounds and the tests of knowledge as well as its means. The self is both agent and recipient, receiving the data of consciousness, thinking them out and coming to conclusions. When knowledge is gained, the self knows. It is plain that the knowledge is an affection of the self; as expressed, it is an affirmation by the self. Therefore, at last, it must rest upon the authority of the self. I came the other day upon a statement, for which the authority of Bacon is claimed, that the fundamental principle of science is "a deep distrust of man's mind when left to itself, but a firm belief in its reliability when working in true comradeship with carefully determined facts".[1] This sentence mentions all the three certitudes, with a somewhat unfair slight upon the first. After all, in the last resort, every man must and does think and judge for himself. He selects the comrades whom he regards as true; he decides what facts are carefully determined. This personal action and decision in knowledge is inevitable; and if we must needs begin with a *deep distrust* of one's own mind, it is a poor prospect for knowledge. No doubt the writer meant that a wholesome remembrance of our liability to error should keep us from excessive self-confidence. In fact, we must and do trust our own minds; at the same time we know our fallibility, and therefore seek the co-operation and confirmation of other minds. We know that all men are liable to error; therefore we go to the "facts" or nature. When all these three agree, when personally I myself know something clearly, certainly, when all men agree with me in the same knowledge, when this knowledge is verified by facts or natural events, such knowledge has the strongest certitude.

The certitudes themselves are established and confirmed by this threefold evidence. How is it then that we could say

[1] E. W. Scripture, *The New Psychology*, p. 3.

the certitudes are not included in knowledge? The certitudes surely are known, and already some pains has been taken to meet the objection that the subject of knowledge cannot be its object. We can think about ourselves, and thus become objects of our own knowledge. But however awkward and roundabout this way of putting the case may seem, while we stand by our present definition of knowledge, we must adhere to the statement that the certitudes do not fall within it. For this definition makes knowledge a certitude which is the *result* of thinking and reasoning. Now this definition may be too narrow. We may hereafter see reason for widening it. But in the meantime we hold fast by our definition, because it is the best we can find for actual common knowledge; and evidently the certitudes do not come under the definition. They are known, but they are not exactly knowledge. The knower is more than his knowing, and *is* before and apart from his knowing. The self is self-conscious. Our first step in this inquiry was the observation that consciousness precedes knowledge and is distinguishable from it. From this point of view all the three certitudes are data of consciousness and real things or parts of reality. It is one thing to know that we have a datum of consciousness, and another thing to know what the datum *is*. Our knowledge of the certitudes, so far as these are given in consciousness, and are thus the basis of knowledge, is knowledge of their existence: not merely and barely that, for mere and bare existence we never know, are never conscious of. All our consciousness of existence is of existence of some kind or quality. Each of the three certitudes has its own markedly distinct kind of existence. But even so: the amount and degree of knowledge is not such as to entitle us to say we *know* the self, or other selves, or the reality. On the contrary, we are fully aware that we know very little of these three realities: if you push us into a corner, we must admit that we do not know *what* the self is: that therefore we do not know *what* other selves are: and that, if our common knowledge has a general defect, it is our tendency to over-estimate our knowledge of what things are.

Common knowledge, however, takes the certitudes as given, and directs itself almost entirely to their relations, and the

effects of these upon personal interests. Self-knowledge may be sought from moral and religious motives; might wisely be sought even from motives of prudence. For the most part, however, we seek knowledge of things, and of other persons. If we know how they affect us, how we may get our will of them, this commonly includes all the self-knowledge that men seek. Ordinary knowledge has mainly an outward reference, from self to things, and to other selves. It consists of particular facts and general rules; but these generalisations are not true "universals". With the spread of education, a smattering of science gets mixed with popular conceptions; but if we estimate the knowledge of the masses at its true value, it cannot be considered scientific. To the plain man it is a maxim that "there is no rule without an exception". The elements of arithmetic and geometry are the exception to this maxim. Outside truths of number and quantity, popular knowledge reaches only to general laws, not to universal certainties. Some of these are practically treated as though they were universal. It is said that "all men are mortal"—nobody hesitates to accept the proposition; though if I am asked, "Do you positively *know* that all men who have lived have died, and that all living men will die?" I am in honesty bound to admit that I do not know this. Nevertheless, for practical purposes, I accept the rule as though it were known to be universally true. Strictly speaking, this is not "knowledge," not thinking which results from a perfect and exhaustive acquaintance with all the facts, but an accommodation accepted for personal convenience. Seeing that the totality of the facts is inaccessible, I form my judgment from a part of the facts under a strong expectation that it will hold good so long as I am concerned with it. What we have to observe, as students of the nature of knowledge, is that ordinary folk do not go even so far as this. They do not discuss the question, "On what grounds do I allow a part to stand for the whole?" "The whole" is a conception which they have not reached. To them the world consists of an indefinite number of particulars: not of an infinite number of particulars connected in one all-embracing system.

Knowledge, then, according to our first survey of its nature

and characteristics, expressed in the definition, "the results of thinking which accord with real facts," is not a complete, self-consistent, self-contemplating, system of thought. On the contrary, it makes no profession to completeness and system: and if we inspect its contents, the conception of a unity and whole of things is not there. The whole mass of knowledge is loosely held together as being human knowledge. Each individual has only a portion of the mass; but he believes that the rest of it is of such a character, that, given time and opportunity, and some increase of the kind of mental ability which he possesses, he could conceivably attain to that knowledge also. It does not enter into the ordinary mind that there is any need to criticise knowledge, to study its nature, to ascertain its foundations. Consequently, the common mind is less sensible of its own ignorance than the more educated and reflective mind. Its defect is excess of confidence in its own limited views. To consider the validity of knowledge, and the reality of its foundations, is a mental process of which it does not feel the need, and cannot perceive the rationality. The three certitudes are practically accepted as ultimate, unquestionable, indubitable facts, without being distinctly recognised as the conditions and foundations of knowledge. Nevertheless it is evident to the reflective observer that common knowledge rests upon these certitudes as their given foundation; and that if these certitudes could conceivably be shaken or removed, the knowledge which rests upon them would be annihilated.

PART III.—SCIENCE.

CHAPTER I.

WHAT IS SCIENCE?

WE have to examine science from a special point of view. So far as the results of science are concerned, we accept with unhesitating belief everything which comes to us supported by the unanimous assent of the experts. All this, however interesting and valuable as it is, we must entirely neglect; or content ourselves with a passing glance at it, to see if we can obtain any sidelights therefrom to help us in our investigation. On the other hand, that which science in its teachings generally neglects is for us the chief or sole interest in science. Science is objective; it seeks knowledge of things: its gaze is ever outward and onward; never turned back upon itself. In other words, science is what is *known;* we want to understand the *knowing*. Astronomy knows that the earth moves round the sun; chemistry knows that water is composed of two gases; but it is of no use to ask astronomy or chemistry—what then is this *knowing?* As a rule, science does not reflect upon itself, has no time nor inclination to discuss the *nature* of knowledge, being wholly absorbed in its acquisition. This statement of course must be modified when the mental sciences are taken into account. But speaking of science generally, its attitude is that of observation of facts, its aim is to reduce facts to general laws, its end is attained when these general laws are discovered. Or, if the scient is not satisfied with the ends already reached, he strives to push on in the same direction. The ideal goal towards which he bends his imaginative speculation is the discovery of one highest and all comprehensive law. The initial thought of

science may be thus expressed: *something which the mind perceives exists.* The *something* is then seen to be many things related to each other in many ways; but the ideal final thought of science is: all these many things with their manifold changes are *one thing changing into many forms according to one immutable all-governing law.* It is beyond our province to speculate whether or no this fundamental and ruling thought of science is well-grounded or not. Hereafter it will be necessary to consider this grave question in its proper place. But here we have simply to note this general characteristic of science: it would know everything; it would show that everything is and moves according to order and fixed law; but what this *knowing* is science does not even try to explain.

We, on the contrary, are not exploring the heavens and the earth; we are not aiming to extend the *range* of knowledge. We want to understand what this *knowing* is, and on what grounds its validity is assured to us. In respect to science, what we have to inquire is: not *what* does science know? but *how* does science know? As to ordinary knowledge, we have pushed our inquiry to some extent, and have attained to some provisional conceptions. Now, in the presence of this vast, awe-inspiring mass of knowledge called science, the first and all-important question for us is as to the character or quality of scientific *knowing*. Is scientific *knowing* the same as ordinary *knowing;* or is it different in kind? If the answer should prove to be that science is a different way or kind of knowing, then we must endeavour to ascertain what that way is; how it differs from the usual way of knowing; and what help we can obtain therefrom towards the solution of our problem. On the other hand, if the answer assures us that knowing whether unscientific or scientific is all essentially alike in its subjective quality, and differs only in amount or in the objects to which it is applied, we shall proceed on our way without needing to examine science further, except in so far as any one of the sciences may seem to promise some contributions or suggestions useful for our inquiry.

What, then, is science? Is it or is it not essentially the same kind of knowing as the common knowledge of everyday life? We had better seek our answer from the teachers of science. As matter of fact, in these days no man of ordinary

education can be so totally ignorant of science as to be unable to answer this question for himself with some degree of confidence: but he may still possibly distrust his answer, as applied to the higher reaches of science, which are by their technicalities inaccessible to his intelligence. We go then to the great teachers of science for a definition, or at least for some description, of science as a kind of knowledge. To our surprise, perhaps, a definition of science is not easily discoverable. This surprise, however, is soon dispelled by the observation that evidently the teachers of science have not felt that science needs a definition. A particular science has to be defined, but science as such is simply knowledge. Again, the particular science is defined, not as a particular way of knowing, but as a particular class of objects known. The absence of a scientific definition of science is decisive evidence that to the scientific mind, science is just knowledge—not another new or different kind of knowledge.

This observation is confirmed by such descriptions of science as are met with: for instance science is unified knowledge, systematised knowledge, knowledge of general laws, knowledge obtained by observation and experiment, etc. In all these paraphrases the word knowledge is retained in its simplicity, without even an attempt to explain it, without the shadow of a hint that as *knowing* it is supposed to be of different character from ordinary knowing. If we consider the significance of the various adjectives which qualify the word knowledge such as "unified," "systematised," it is clear that the unified, systematised knowledge implies a rearrangement of items of knowledge which previously were known apart from their orderly connection. There is no allusion to new faculties of mind, new laws of logic, new methods of reasoning. Common knowledge consists of a limited apprehension of general laws, and was obtained by observation and experiment. A farmer sowing wheat in the expectation of reaping a harvest of wheat, and a mason building his wall by a plumb-line, display a measure of knowledge of natural law of the same kind, and tending in the same direction, as Newton's knowledge of the law of gravitation. The difference in degree is, no doubt, immense, but of kind there is none.

To dwell at such length upon the identity in nature of common knowledge and science seems superfluous, seeing that this identity is amply recognised by the teachers of science. We may quote, for instance, Professor Huxley: "No line can be drawn between common knowledge and scientific knowledge; nor between common reasoning and scientific. In strictness all accurate knowledge is science; and all exact reasoning is scientific reasoning. The method of observation and experiment by which such great results are obtained in science is identically the same as that which is employed by everyone every day of his life, but refined and rendered precise."[1] Herbert Spencer says: "The same faculties are employed in both cases, and their mode of operation is fundamentally the same".[2] "The assumed distinction between scientific knowledge and common knowledge is not logically justifiable."[3] When we come to consider the separate sciences, we shall see that each of them confirms these statements. Sciences grew out of ordinary knowledge, and history bears witness to the unity and continuity of the development

Knowledge, then, is a unity. Our provisional definition, "the agreement of thought with reality," holds good for science as for unscientific knowledge. We have not two different knowledges, but only one. This unity being generally acknowledged, why have we insisted upon it at such length, and fortified our assertion by quoting authorities? Mainly on account of its intrinsic importance. Investigation of the nature of knowledge is a difficult task as it is: if instead of one homogeneous knowledge we had to study two or more kinds, the difficulty might well seem insuperable. Of course the fact that we have only one kind of knowledge, and can form no adequate conception of any other, does not prove that no other exists. On the contrary, the inferior animals have a kind of knowledge, though what it is we but vaguely imagine, That there are beings in the universe possessing a kind of knowledge as superior to ours as ours is superior to that of the brutes, is possible, nay, probable. But human knowledge alone is within the range of our immediate consciousness; and

[1] *Introductory Science Primer*, p. 16.
[2] *Essays*, ed. 1868, vol. i., p. 116. [3] P. 117.

for our present inquiry the essential identity in nature of this human knowledge is a primary truth, in the absence of which we should hardly venture to proceed. Theosophists and mystics may dream of another wholly different kind of knowledge, but common-sense and science agree in believing that human knowledge from its small beginnings to its loftiest and widest attainments is essentially one.

Nevertheless, here as elsewhere, identity does not exclude but enfolds difference. That there is immense difference between the crude beginnings of knowledge and the last results of modern science is evident; but what makes the difference requires some thought. One point is clear—wherever common knowledge and scientific knowledge relate to the same subject-matter, the scientific knowledge is greatly superior. At first sight the superiority seems to be both in quality and in quantity: science knows the common knowledge more accurately, and besides, knows much which common knowledge has never even imagined. Exact measurement is a distinguishing mark of science. The old charwoman longing for a cup of tea knows that the fire will "make the kettle boil"; the scient has ascertained that water boils at a temperature of 212° Fahrenheit at the sea level. The old woman knows that boiling converts water into steam; the scient knows that all solids become liquid, and all liquids gases, under the influence of heat, and, conversely, he solidifies air and gases. Whether we shall accept the theory of two forms of superiority, better in quality and greater in quantity, or reduce them to one, will be determined by the meaning we assign to the word "knowledge". If we use the word knowledge for the vague and partial conceptions of things which satisfy many minds, then we must pronounce science superior both in quality and in quantity. If however we rigidly adhere to our definition of knowledge, then all knowledge, wherever and whatever it is, is of the same quality, and the differences are only of more and less. Knowledge is thought corresponding to fact; and what does not correspond is not knowledge. All knowledge is true and certain: what is not true and not certain is not knowledge. Stick to this definition; and common knowledge is identical in quality with scientific. The old

woman's thought that fire boils water is in its nature as good knowledge as any that the science of thermo-dynamics teaches. It seems to me, then, that the difference between science and unscientific knowledge is of amount rather than of quality.

However this be, it is plain that the superiority of science is enormous—in amount, in interest, in intellectual satisfaction, in practical usefulness. Within its own fields, science absorbs and supersedes common knowledge; so that the latter is no longer deserving of any separate esteem. Scientific knowledge thus becomes the only knowledge; and knowledge which is unscientific seems to be worthless. When we survey the marvellous progress, the wonderful discoveries, the practical services, the far-reaching generalisations of modern science, it is not surprising that science has come to be regarded as the type of knowledge, outside of which there is nothing worthy of the name. And yet this widely-prevalent opinion is not one which a thoughtful man will accept without consideration. It has strong arguments on its side. All knowledge is a unity: science grows out of common knowledge, adopts and improves common knowledge, is exact and logical, carries knowledge to the utmost possible limit in whatever direction it takes. Why, then, should we not accept the opinion that science is lawfully the queen of thought, that what she teaches is truth, and outside her territory is naught but ignorance, superstition and delusion? The reason is not far to seek. Some human knowledge is not reducible to scientific form—at least, has not yet been cast into the mould of science—and among this unscientific, or rather extra-scientific, knowledge is ethical and religious knowledge. While fully and frankly admitting the superiority of science to unscientific knowledge wherever there is science, it would be premature to bow to the merely hypothetical supremacy of science in regions of thought wherein at present no science exists. To sober, clear-thinking, truth-seeking minds this reason is decisive. We cannot give up the extra-scientific knowledge which we actually possess at the summons of an imaginary "science," whose interference in these regions of thought is not even intended to increase knowledge, but on the contrary to extinguish already existing knowledge, and to substitute for it—nescience. The

enthusiasm, or intoxication, of scientific triumphs, has been so widely contagious in modern times that a bare statement of the fact that there is extra-scientific knowledge will not suffice as an antidote. We must reconsider the question—what is science?

Holding fast to the true meaning of "science" as simply knowledge, we must accept the fact that "science" has now by usage received a special meaning as knowledge *par excellence;* knowledge somehow distinguishable from all knowledge which does not belong to science. Again, we find "science" with this special signification claiming the whole realm of the known and knowable. Thus we have three stages of usage: (1) science = knowledge; (2) "science," a superior form or way of knowledge; and (3) this superior knowledge assumed to be all and the only knowledge. The middle stage is the one which needs to be defined. What is this "science" which has a special character, constituting its superiority to other knowledge? Our review of the descriptions of science by its teachers did not bring to light any clear mark of distinction. We meet, however, in scientific writings with frequent references to "the spirit and the methods of science," and it seems that these are regarded as its differentiating marks.

By the "spirit" of science is meant single-eyed devotion to, and pursuit of, truth, regardless of all possible consequences. The historical origin of this conception is well known. Modern science found the human mind already occupied by numerous prejudices, superstitions and errors, through which it had painfully to cut its way, encountering much obloquy and opposition. In its onward progress, moreover, it not seldom disturbed venerable and sacred beliefs with which these prejudices and superstitions seemed to be inseparably intertwined. Hence arose this idea of heroic pursuit of truth "in scorn of consequence". This is not the place to discuss whether this proposed divorce between truth and human weal is necessary, or even possible. The conception of the pursuit of truth for its own sake, without being daunted by fear of harm or diverted by hope of gain, is in itself a noble conception. In a temporary state of affairs, science had the honour of specially feeling and following this animating principle. But we fail

to see here any peculiar characteristic of science. In the first place, all knowledge is truth: all seeking of knowledge is pursuit of truth: in the nature of the case every honest truth-seeker must pursue it in this spirit. Secondly, in world-history, science has had no monopoly of the hardships, misunderstandings, persecutions, which befal the truth-seeker. The pursuit of truth in politics, in ethics, in religion, has demanded its full share of heroism and martyrdom. Thirdly: however praiseworthy it is, the *spirit* of science is not science. We here fall upon an ambiguity in the term science which is a fruitful source of misunderstanding. Science properly means knowledge, whether all knowledge, or a special form of knowledge. Science is the possession of knowledge, not its pursuit. The employment of the name "science" for the process of seeking knowledge is common; but it is incorrect and misleading. The "spirit of science" refers to the activity of the human mind in its desire for knowledge; and it is this activity which the spirit of whole-hearted devotion to truth energises. When the knowledge is once acquired, the pursuit ends. Of course, the pursuit of more knowledge continues; but none the less it remains the fact that the so-called spirit of science has nothing to do with science already attained; it is a quality or tone of the mind which has not got science, but is seeking for it.

The "spirit" of science not supplying that differentiating characteristic of which we are in search, let us now consider "the methods of science". These we are told are "observation and experiment". In the use of these methods, we have before remarked, science holds no patent of monopoly preventing unscientific knowledge from the employment of the same instruments. Passing that by, we note here that the claim of science to base its operations and conclusions upon the foundation of observation and experiment has associated with it two beliefs which are another element in the "spirit" of much modern scientific reasoning. These beliefs are: (1) that sensible, especially visible and tangible, facts exclude the possibility of error, and thus afford the ultimate criterion of truth. "Nature," it is said, "never deceives": the term nature being used in contrast to the operations of the human

mind. All errors are supposed to be of mental origin—mistakes in interpretation of given facts: (2) the other belief is that the human mind is radically unreliable as a source of knowledge. Left to itself it is a born fool and deceiver. Our senses deceive us, our imagination revels in falsities, our reasoning is liable to fall into self-contradiction and fallacy. Only as sternly held in check, its nose kept close to the grindstone of hard facts, can the innate tendency of the mind to aberration be thwarted. Whenever science can point to visible and tangible realities as its primary data, and at the close of a piece of reasoning which has proceeded hand-in-hand with observation and experiment, can again verify its conclusion by perceiving that this also accords with visible and tangible realities, then and then only it attains to certain knowledge. This is "the sure path of science". In contrast with this solid certainty of science, all other contents of the human mind, the æsthetic, moral and religious feelings and convictions are regarded as shadowy, unsubstantial, unworthy to be reckoned matters of knowledge. This description of the scientific belief in facts and distrust of mind may appear somewhat exaggerated; doubtless the *greatest* scientific teachers have been too rational to push the belief to extreme application. Nevertheless I think that these earnest teachers have been conscious of a *gap* between their scientific thinking and other convictions which they were too wise to discredit; and that the prevalent belief among the fanatics of science is as above described.

We saw before[1] that the authority of Bacon has been adduced in support of this distrust of the human mind in comparison with the reliability of physical fact. Kant, the author of the phrase, "the sure path of science," cites Bacon as approving the opposite view, namely, that the way to science is not slavish subservience to observation of facts; but on the contrary "reason must go to nature, not as a mere pupil who allows himself to be taught by her in everything just as the teacher pleases, but as a duly-qualified judge who compels the witnesses to answer the questions which he puts".[2] The explorer of nature experiments, but not in a haphazard

[1] Part ii., chap. vii., p. 100.

[2] Preface to second edition of the *Critique of Pure Reason*.

way. He determines his conception beforehand (*a priori*), and frames his experiment to make nature say whether the conception is true or not: for, as Kant says, "reason only perceives that which it itself designedly produces". In support of this view that the human mind itself is the originator of science, Kant points to the first geometer who thought out the construction of the equilateral triangle as the man who opened to mathematics "the sure path of science". As instances in modern times, he names Galilei and Torricelli who placed physics on the same "royal road," not by mere experimenting, but by mental judgments which they brought to the test of experiment. So Copernicus revolutionised astronomy, not by experiment, but by his own mental conception that he, the spectator, was turning while the stars remained at rest. Had he lived in our time, Kant might have added the great name of Darwin to his examples. To quote the words of a distinguished psychologist: "Darwin was a great constructive thinker . . . who reached his conclusion by what that other great scientific genius of England, Newton, described as the essential of discovery, 'patient thought'".[1] For, as another writer remarks, "powers of observation, however acute, could never make a scientific discoverer; for discovery requires the creative effort of the imagination. The scientific man does not stumble upon new facts or conclusions by accident; he finds what he looks for."[2] In Darwin's own modest self-estimate, he attributes his success not solely to "industry in observing and collecting facts," but names besides "unbounded patience in long reflecting upon any subject, and a fair share of invention as well as of common sense".[3] These instances suffice, if not to prove Kant's theory that the human mind is the supreme source of science, at least to disprove the opposite theory which attributes science to external observation alone, and regards every operation of the human mind with suspicion. Such suspicion, indeed, recoils upon science itself, and at the same time brings nature into discredit: for science can only be obtained and

[1] Baldwin, *Social and Ethical Interpretations*, p. 568.

[2] Professor Paulton, quoted by Baldwin, *loc. cit.*

[3] Quoted in *loc. cit.*

held by this human mind just as it is ; and however poor its faculties may be, the mind as it is, is a product and a part of nature itself.

So far are we from finding in "the methods of science" the special character of which we are in quest, that we are obliged to call in question the correctness of the description of these methods which is commonly received. More than this, the opinion that bases the certainty of knowledge upon visible and tangible facts cannot be allowed to pass without a protest. That these visible and tangible facts are the primary data of physical science is true ; but they are not actually the ultimate data of consciousness. These ultimate data are sensations, not things : the things are known by the mind through the sensations. A full discussion of this connection between sensation and knowledge would be out of place here. What we have to note now is that "the spirit and methods of science" seem to be misunderstood by many who put themselves forward to speak for science ; that they are, at least, debatable ; and therefore cannot constitute the special mark of science which we seek.

Yet that science has a character of its own, by which it is distinguishable from other knowledge, or, at least, is supposed to have this character is proved by the usage of modern language. It seems highly improbable that "science" and "scientific knowledge" should be so constantly spoken of in contrast to ordinary knowledge, unless there were a reasonable ground for the distinction. Having failed to discover this ground in the descriptions given to us of science in general, we must now set about searching for it ourselves. We ask again—having in view that second stage in the meaning of the word, wherein it is somehow distinguished from other knowledge —what is science? The safe and correct answer is "knowledge contained in the sciences". We may arrive at this answer inductively : astronomy is a science ; botany is a science ; chemistry is a science, and so on. Draw up a complete list of all the sciences, and then you may point to them and say this knowledge, knowledge of this kind, is scientific knowledge, or, briefly, science. But now a difficulty arises, no universally accepted list of the sciences exists. An old science may fall

in reputation, and its right to be esteemed a science may be called in question—political economy, for instance. A brand-new science may be offered us, the name of which had not been coined a few years ago—physical chemistry, experimental psychology, are instances. And it may even be a question whether a particular so-called science contains any knowledge at all. For we have remarked on the curious usage by which science sometimes stands for the pursuit of knowledge ; for the process of seeking knowledge, as well as for actual knowledge. This misapplication of the term we cannot possibly admit into our inquiry. Knowledge is our subject-matter ; and what is not knowledge does not concern us. Under these circumstances our best plan is to confine ourselves to those long-known, well-established sciences which have won universal recognition, and by their abundant contributions to the sum total of knowledge have given occasion to that meaning of science which elevates it above other knowledge. Mathematics, astronomy, mechanics, chemistry, geology, botany, zoology, physiology, may with perfect security be named as such. These are sciences : in them there is knowledge. To these we may look for instruction as to the special character of science.

The first characteristic of a science is that it has a special subject-matter of which alone it treats, and treats it as a whole. In astronomy we are not taught about plants, nor in botany about the stars. Mathematics makes no reference to chemical atoms, and chemistry does not allude to mathematical points. In a word, each science is an abstraction, a department of knowledge, in which all the knowledge relating to one particular subject-matter is included in an orderly arrangement, and knowledge related to other subject-matter is designedly omitted.

Secondly : in every science the subject-matter is objectively regarded. Astronomy, for instance, is knowledge of the apparent and of the real motions of the heavenly bodies : this knowledge was in the minds of certain men, Hipparchus, Ptolemy, Tycho Brahe, Copernicus, etc., and is now in the minds of certain other living men. But astronomical science ignores the men and relates to the stars. Similarly in the cases of other sciences. Of course there are histories of science and of separate sciences ; also biographies of the great discoverers of science, but these

histories and biographies are not parts of the science. Still more remarkable is the total ignoring of the *mind* which knows, and of the mental state or activity called *knowing*. The sciences wholly exclude these from their consideration. Of course, the mental sciences are an exception to this statement—and their case will have to be separately considered—but plainly, it is not the mental sciences which have given rise to that special meaning of science we are now concerned with. The sciences which have given to the term *science* its special significance are sciences in which the mind is the spectator of phenomena, or facts, about which it thinks, which it comes to know; and this knowledge is science. For instance, "the sun is the centre of the solar system" is a scientific statement. The full description of the actual facts would be something like this: human minds contemplating the visible aspect of the heavens think, or conceive, a position of some of these bright bodies, in which one, the visibly brightest, is in the centre, and others, some seen in the sky, as the planets Mars and Jupiter, etc., another not seen in the sky, namely, the earth, move in elliptic orbits round the centre. Of this full concrete fact the astronomer drops out of sight the contemplating and reasoning *mind*, and keeps his attention entirely fixed on *the sun and planets*. This is what is meant by the objectivity of science.

We find, then, that these two marks distinguish a science: (1) its selection of a particular class of objects for its subject-matter; (2) the objective way in which it regards this class of things. These marks are two forms of one process—abstraction. The first abstracts the subject-matter from the concrete totality of nature; the second abstracts consciousness and knowledge of the subject-matter from the knowing self. We need not affirm that these processes of abstraction are never found outside science; it is enough to say that in science they are consciously and of set purpose resolved upon and carried out. Thus we have some insight into the nature of scientific *knowing:* it is mental activity, and mental activity determined by the will. Selection is choice, and in science there is nothing external to the mind which compels the choice. We are free to choose whether we shall study astronomy or chemistry, and

indeed whether we shall study science at all. The objectivity of science is not so evidently determined by the will; yet here also reflection shows that the subject is actually present in all science. At first, no doubt, the natural bent of the mind and the superior attractions of objective knowledge lead to this outward regard; but later on, the mind's claim to, and need of, attention comes into view; and is deliberately ignored by objective science. Science then is abstract and objective.

On science in general perhaps nothing further can be said: we shall presently consider particular sciences. Meantime, one remark to safeguard ourselves against possible misconceptions. Stress has been laid on the activity of the mind in the acquisition of scientific knowledge; but let not undue stress be used. Kant's comparison of the human mind to a judge rather than a pupil, his assertion that reason only perceives that which it produces, must not be misconstrued as involving an absolutely originating power. Such phrases as "the creative power of the mind," "the constructive work of the intellect," are dangerous. According to the objective character of science, the mind is only the observing and thinking spectator. It brings nothing with it but its own intelligence. All the facts are there, outside, in no way affected by the mind's presence. Whether in the final philosophical judgment of the universe this theory of the mind's practical isolation will maintain its hold upon us or not, certainly here in considering science we must not abandon the scientific theory. The activity of the mind is confined to its own thinking, and to the arrangement of things which it makes in experimentation. The facts as given and their behaviour are not under the mind's control. What it judges is really not the facts, but its thoughts about the facts. What it creates or constructs is hypothesis or theory to explain the facts. The final act of discovery—how is that to be regarded? Undoubtedly this is a wonderful act; it is not surprising that some are inclined to see here a mysterious something—the "inspiration of genius". That a human mind should bring to nature a theory of its own invention, and then discover that nature corresponds to his theory—this is marvellous! But without detracting from the greatness of the human mind; without

disparaging the genius of Copernicus, Newton, Darwin; we may still endeavour to keep within the limits of sober thought. Not even the mightiest human intellect can invent an absolutely original thought. The conceptions of the great scientific discoverer are adaptations of other conceptions, which he in the first instance acquired in his observation of natural facts. The inventions of the human mind are made by means of conceptions which its intelligence originally acquired in its early lessons in nature's school. The mind which judges has itself passed through a process of natural development. The last step of the brooding intelligence, by which it passes from the condition of wondering contemplation of a mass of intricate phenomena to the conception of the guiding thought which indicates a natural law, may seem to come by a flash of genius; but however novel the conception, the discoverer adds nothing thereby to nature; he only perceives now for the first time what was there in nature before. Machines, of course, are made which are entirely novel in form and in use; but these are simply new arrangements for utilising natural forces. There is therefore nothing in science, whether theoretical or practical, which does not fall within our provisional view of knowledge as thinking or judging, which is in conformity with reality. Nature sets the copy, science imitates: nature is the teacher, the scient is the pupil. We must hold fast to these conceptions, while admitting with Kant that the learner is compelled to use his intelligence, to put questions to nature, and to exercise judgment in so doing.

CHAPTER II.

MATHEMATICAL SCIENCE.

In our consideration of the sciences, three conceptions have to be kept in view: (1) the meaning of "science" in the special sense of the word; (2) the homogeneity of knowledge; and (3) the nature of knowledge as illustrated by the science under consideration. The third is rather a desideratum than an actual conception; but we can at least apply to the several sciences for their help in the matter.

The sciences grouped together under the name of mathematics form a class by themselves, distinguished by the peculiar nature of their subject-matter. The other sciences relate to visible and tangible objects, but mathematics deals with mental abstractions which are not found in the real world, but are only ideas. Geometry studies space; arithmetic number. The spatial ideas are position, direction, distance, magnitude, form. Number includes unity and plurality. The single conception of space is an infinite conception, the background and support of all finite positions, forms and magnitudes. That the conception of time stands in a similar relation to numbers is perhaps not so self-evident. Numbers however are known by counting, which is a process requiring time, and time is itself a succession, mentally representable by a continuously moving point. One common character binds together all these conceptions: they are formed by perfect abstraction from everything of a material and sensuous nature. In pure mathematics *one* does not mean one *thing* but unity—the abstract conception of one. A point is not a dot, nor an atom, for it has no dimensions. A line has direction and length, but neither breadth nor thickness. In a word, mathematical concepts, though originally derived from sensible experience, are within and for the purposes of the science,

entirely divorced from the material world. Pure space is empty space; pure time is empty time. The fact that mathematics can, and for the progress of science must, be applied to material things, does not in the least sanction any intermixture of mathematical with material science. In arithmetic, for instance, one and one are two or make two: this remains an immutable truth which neither thought nor force can alter. Outside of mathematics one may become two, two may become one, or become three. Two drops of water become one drop; two gases unite and form one thing, water; one stick is broken and you have two sticks; organisms divide and multiply by fission, one becomes two; or they multiply by coition, two become three or more. Moreover, in the material sphere it is impossible to point to any known immutable unity. Everything is a compound; and every compound sooner or later falls to pieces. Therefore mathematical truths do not hold true for sensible realities; though they can be usefully applied thereto, for practical purposes, within due limits, and with the needful qualifications.

Thus, from the objective point of view of science, the abstractions of mathematics are perfect abstractions. The abstraction however is not really complete. These conceptions, space, time, number, magnitude, position, movement, are thoughts of the human mind. They are a kind of realities which may be called *mentalities*. Possessing a truth and necessity of their own they are indispensable to thought: their validity is unquestionable, and universally acknowledged. Hence mathematics is the science, and the only science, of demonstrative cogency. Here, if anywhere, the human mind might claim to possess absolute knowledge. The claim however is checked and silenced so soon as we begin to reflect upon the nature and authority of the fundamental conceptions themselves. What is space? What is time? They are not merely concepts of each individual mind which thinks them: they hold good for all minds. They are not known to be true for the individual because they are true for all individuals. Mathematical truth does not rest upon universal assent, but upon its self-evidence, and its demonstrations, which the individual knows for himself, just as though he were the only

thinker in existence. What, then, are these concepts? Whence do they derive their peculiar character; and what is the sphere of reality to which they essentially refer? Mathematical science makes no attempt to answer these questions; and at present, so far as we know, they are unanswerable. They belong to the region of ultimate mystery. Accordingly, mathematical science is not absolute knowledge; nor is it perfectly abstract: the connection with the thinking mind cannot be severed. Yet as a science mathematics well illustrates the *objective* character of science. The mathematician ignores the subjective nature of his concepts: their relation to the thinking mind has no place within his science. He arbitrarily treats his own concepts as objects before the mind, neglecting altogether the fact that they are concepts within the mind, or rather, belonging to the mind.

In every other respect mathematics is the typical science. it is what all other sciences fain would be: it is pure knowledge, not probability, not hypothesis: it is exact and certain knowledge, gained by mental operation upon a few simple and indubitable definitions and axioms. It abounds in new knowledge, *i.e.*, knowledge which the mind did not possess when it only knew the first principles. This new knowledge is valuable, rich in practical results. Until within the last or the present generation, mathematics was *the* science *par excellence;* the model to which all the other sciences aspired to conform.

At first sight the extreme abstractness of the mathematical sciences might suggest a doubt as to their agreeing with the theory that all knowledge is essentially of one kind. Common knowledge, for instance, does not consciously delight in abstractions; on the contrary, prefers to stick close to visible and tangible things. Of mentalities it has no conception other than that of spiritual beings, more or less like the self. Abstract concepts are either not formed at all, or only dimly recognised in some confused relations with real things. Thus mathematical knowledge as above described seems a thing apart: of another nature. Moreover, the higher branches of mathematics are an unknown language to the majority, even of the educated. Their technical terms, logarithm, sine, differential

calculus, integral calculus, etc., are to the multitude as unintelligible as Egyptian hieroglyphics. Even the simpler rules of arithmetic are mysterious and troublesome to not a few, otherwise intelligent, people. Dean Stanley, it is said, to the close of his life was not clear as to the distinction between eighteen pence and one shilling and eight pence. Considerable ability, even in physical science, is seen to be compatible with marked ineptitude for mathematics. These observations support the impression that, perhaps, mathematics is a kind of knowledge somehow distinct from that of common-sense. And, of course, mathematics is distinct on its objective side, that is as regards the subject-matter of its knowledge. Between lines and angles, numbers and fractions, on the one hand, and the substances which chemistry explores on the other, the difference is obvious. But our question relates to the mind's knowing: and our conclusion was that this knowing is all essentially of one kind. We have now to ask—does mathematical science support the homogeneity of knowledge?

We turn to the mathematicians for their judgment, and learn that they, far from holding their science to be inaccessible to ordinary minds, on the contrary, recommend the study of mathematics as an especially valuable mental discipline. The word itself is derived from *mathesis*, teaching. Plato, in proof of his doctrine that knowledge is reminiscence, describes Socrates as summoning an untaught slave, and eliciting from him by questions the solution of some geometrical problems of which the lad had never heard before. The experiment, if it failed to prove Plato's theory that knowledge is reminiscence, showed that the human mind was then considered to be naturally competent to attain mathematical knowledge. And this has been the general belief in civilised lands; as the teaching of arithmetic, algebra and geometry in our common schools sufficiently proves. Although the higher branches of the science are only reached by a small number of persons, the unity and continuity of the science forbid our reasoning from this fact to any essential difference in the kind of knowledge.

Again, history confirms the homogeneity. Arithmetic and geometry were gradually evolved out of the mental operations of our long-ago ancestors who counted their sheep and

measured their fields. The origin of the decimal system of numeration is traced to the primitive use of fingers in counting. In the case of all the ancient arts and sciences it is clear that they grew out of an earlier unscientific knowledge, and in no case is this more certain than in mathematics. And the process of development is repeated afresh in every generation. To-day young children are beginning to learn to number their fingers, and to count marbles and other tangible objects; and these same children a little later will learn the meaning of the signs 1, 2, 3, 4, etc., and practise addition and subtraction on their slates. A little longer time passes, and they are learning algebra and geometry. Similarly, the transition from concrete to abstract concepts is always going on. To the child a yard is at first a stick of definite length; and afterwards the name is transferred to the length itself. Uneducated people perhaps never distinctly and consciously abstract the mathematical conceptions; but yet they use the conceptions in a concrete connection in practical affairs. The axiom "things which are equal to the same thing are equal to each other" may never have been clearly detached from its exemplifications; but every time they use weights and measures they implicitly rely upon this axiom. So plain and sure, then, is the homogeneity of knowledge in the case of mathematics, that one must apologise for arguing the point at length.

We now have to consider whether the mathematical sciences throw any light upon the nature of the mental state or activity called *knowing*. First of all, mathematics clearly and convincingly proves that knowledge is a mental activity. For all knowledge of whatsoever kind or degree a mental capacity to receive it is an indispensable prerequisite. But probably it is safe to assert that in all knowledge there must also be mental action. In mathematics, mental agency is almost everything. Nothing is borrowed from the contact of the mind with the external universe beyond a few elementary conceptions. These once secured as basis, the immense, splendid, still proceeding evolution of mathematical science is wholly a mental construction—the finest exemplification of logical process which we have. The rash impugner of

the trustworthiness of the human mind as an agent in the acquisition of knowledge has only to reflect duly upon mathematics in order to be led to repent of his error. But that knowledge is a mental activity was known apart from mathematics, and although this science is the most brilliant exhibition of that activity, we cannot attribute our recognition of this character of knowledge to mathematics exclusively. Can mathematics teach us anything more about knowledge?

The peculiarity of mathematics, we have seen, consists in the *ideal* nature of its subject-matter. Now this objectively treated, after the manner of science, teaches us nothing about knowledge; all it teaches is about lines, spaces, numbers, ratios, etc. The science, as such, never looks back on the thinking mind which reasons it out. We however may, from the stand point of mathematics, turn away from purely mathematical results to consider the *knowing* of these results by the mind. How, then, does the mind know mathematical truth? In two ways—by intuition and by demonstration. The early simple beginnings, the definitions, axioms and postulates are known by intuition: that is, the mind immediately recognises their truth, not requiring any argument or proof from any source outside the concepts and propositions themselves. The longer and more difficult chains of reasoning which lead to conclusions are called demonstration. That twice two are four is known intuitively: but if we wish to know how many seconds there are in a year we have to multiply $365\frac{1}{4} \times 24 \times 60 \times 60$, a process of many steps, the whole of which cannot be grasped in one intuition. We can mentally *see* at a glance that twice two are four. We cannot so *see* the number of seconds in a year. That a square has four and only four angles, and that these are right angles, is within the scope of mental vision. We have but to prolong two of the sides, and we see four angles around one point, one of which belongs to the square; the equality of these four, and also of the four within the square, is mentally visible. Note however that we cannot pretend to distinct vision of an exactly perpendicular, nor of an exactly straight, line—for there might be a slight deviation from the exactly correct direction, too small to be discerned by the eyes. Our mental lines are exactly straight,

and our mental angles exactly right angles, not because we *see* them so, but because we *intend* and *will* them to be so. We make them what they are by definition; that is, by mental determination. Being thus by mental construction made exact, the mental intuition of equality follows also as a judgment of the mind, not as a sensuous perception. On the other hand, the famous proposition that the square on the longest side of a right-angled triangle is equal to the sum of the squares on the other two sides, is not an equality which can be discerned by merely looking at the squares: it has to be proved, that is, made evident by a construction of a somewhat elaborate nature and by a series of steps of reasoning. In this reasoning, however, each single step taken by itself is simple enough to fall within the scope of intuition. So in the case of long processes of multiplication and division. Ultimately, then, a chain of reasoning is a whole held together by memory, in which each link is an intuition. We may therefore say generally, that mathematical knowing is intuitive.

What, then, is intuition? It is not merely a mental copy of external vision. In simple cases it may appear to be this, and nothing more. But it is something more; and that something more is the essence of the intuition. The picture, whether made externally in black and white, or whether it be a diagram constructed only by the mind, is not the knowledge, does not suffice to produce the knowledge. We may grant that the picture is an aid to our thinking; but it does not of itself constitute the thinking; rather the thinking produces the picture, according to its own design. That this is so is shown by the fact that we reason intuitively when pictures are impossible. That two twos make four is visible; but that ten hundreds make a thousand can hardly be visibly seen; a thousand thousands make a million, but a million is too vast a number to be visibly represented in any mental act. Moreover, mathematical judgments transcend all limits and pass on into the infinite. Two parallel lines prolonged for ever will not meet; two lines meeting in a point, prolonged for ever, will never enclose a space. The infinite in space and in time cannot be pictured—not even in thought. Apart from this exceptional impossibility, there is a characteristic of all

mathematical knowledge which removes it from the region of pictorial imagination. Mathematical judgments are *universal: i.e.*, they do not mean the particular figure which may be in the mind's eye. It is not the square I draw on paper, or construct in my mind, in regard to which I know, as a particular case, that *it* has four right angles. What I know is, that *the* square, that is, *every* square, has four right angles. Triangles differ not only in magnitude, as do squares, but in figure, equilateral, isosceles, scalene, obtuse-angled, with an infinite variety in their proportions: yet the three angles of any and every triangle are equal to two right angles. This universality is the very essence of the mathematical judgment; and this can in no way be pictorially imaged. Again, all mathematical truth is necessary. Not only is it so, it must be so, it cannot be otherwise. This necessary and compulsory character cannot be represented by a mental picture. We must therefore not be misled by the word intuition, *i.e.*, seeing, into the erroneous supposition that mathematical knowing is, or is dependent on, pictorial representation, whether in the mind or out of it.

What do we gain, then, by calling our knowing *intuition?* I think, in fact, nothing at all. We are just where we were before. The invention of a new name is sometimes deceptive, by producing the impression of knowledge where none has been gained. Knowledge is said to be a faculty of the mind, a function of the intellect, or, as we have been saying, mental intuition. But what is "faculty"? what is "function"? There is no ground for the supposition that the mind is made up of various "faculties," as the body is made up of head, trunk, arms and legs. "Function" is simply doing, or activity. All these phrases mean no more than the simplest expression for knowledge, the "I know" of common speech. "Intuition" is no better than the others. Intuition may be distinguished from inference: the one as immediately self-evident knowledge, the other as resting upon previous knowledge, which is its ground or proof; but the distinction, as we have seen, does not affect the inner nature of the knowing: for inference must ultimately rest upon intuition. Here in mathematics, if anywhere, we may expect to see into the nature of this intuition; for it relates to sharply-defined ideals, the products of the mind itself: it is certain, universal, necessary—the most perfect and the most cogent knowledge we have. What, then, is the intuitive act or state? It is an inexplicable, unanalysable fact of my being. It differs from consciousness in that consciousness may be of ignorance, doubt, perplexity. In consciousness there is an awareness that "*something* is"; in knowledge the *something* is known to be this or that, thus and not otherwise. All of which amounts to no more than is sufficiently and best expressed by the simple statement—"I know". For instance, we all know a circle as having centre, circumference and equal radii. The conception of a circle as made by a line fixed at one extremity and revolving in a plane is simple and clear. The circle once conceived, many interesting relations connected with it can be known: such as triangles and squares, inscribed and circumscribed. In all this clear and certain knowledge, the mathematician knows, and is conscious that he knows, is sure that he knows—but ask him what the "knowing" is, he can only say I know that these my mental judgments are true. The circle is as I think it; I think it as it is: this is knowledge, this is truth.

From mathematics, then, we can get no direct light upon the nature of knowledge: but the science throws a sidelight, which must not be overlooked. Generally speaking, the "something" in consciousness about which knowledge is attained is an objective reality: hence the common definition that knowledge is agreement with reality. In mathematics, however, the objects have no external reality. These points, lines, circles, triangles, numbers, fractions, ratios, are not *things*—they have no concrete reality; no solidity; no flesh and blood. They are bodiless nonentities; shadowy tenants of an infinite empty space. They are mentalities, or idealities. What, then, are these ideal figures and numbers? Are they not also, somehow real as well as ideal? Can we, do we, confine space to the mind alone? These are difficult questions: but mathematical science does not deal with them. Nevertheless the science enables us to make some important assertions in respect to its ideal contents. These ideals are not *arbitrary* concepts. True: the mind itself defines them, constructs them; they are so far

a product of mental activity and volition. But the fact is that I must think them as I do think them. My mind acts freely: I could refrain from thinking upon these ideal conceptions; many of us are satisfied with a mere smattering of mathematical knowledge, just so much as comes with little or no mental labour. But if I do think and reason, I find that somehow the pattern after which I must think is fixed already. As we have seen, mathematical knowledge is necessary and compulsory: it must be so, and we must know it so. Moreover, this necessity and compulsion presses upon each of us severally, and upon all of us alike. Mathematical truth needs no confirmation of universal assent: it is not strengthened by majority of votes, nor even by unanimous approval. Yet it commands this unanimous agreement between all minds, because mathematical demonstration is equally compulsory on all minds.

Here we must pause. What this compulsion means we cannot learn from mathematics. Subtle as this science is, it has no symbol nor formula for this necessity of its own knowing. We must take note of the fact for future use. In mathematics, knowing has both an individual and a universal character—it is "I know," and it is "we all know"; it has a necessary and a compulsory character; the knowing must be what it is, and we, if we know at all, must know thus and not otherwise. These characteristics of mathematical knowing are profoundly suggestive. They give rise to the conception of a system of ideal truth; infinite, immutable, eternal; true once, everywhere, and for ever; above and beyond each individual mind, yet holding each individual mind in absolute subjection, and all minds in one uniform subjection. Albeit the subject-matter of the science is but empty space and abstract number, this conception which it gives us of a system of truth, accessible to all and supreme over all, is well worthy of remembrance.

CHAPTER III.

THE SCIENCES OF INORGANIC MATTER.

FOR our purposes a separate notice of each department in the broad field of science is unnecessary, because the homogeneity of science itself is undisputed. Science has been supposed to differ from common knowledge, from ethics, from theology, from metaphysics and philosophy; but no one has ever suggested that scientific *knowing* contains internal differences —the diversities of the sciences being accounted for by the varieties of their subject-matters. This being so, it might suffice to consider two or three sciences as specimens of the whole; but to get a wider view let us divide the sciences into groups: (1) the mathematical, already noticed; (2) those sciences which relate to inorganic matter; (3) the sciences of animal and vegetable life; and (4) the sciences of mind.

The inorganic sciences have been divided into two groups. In one group, which includes astronomy, mechanics, the sciences of light, heat, electricity, etc., exact quantitative measurements are possible; and thus mathematics can be employed as instrument of calculation. These, therefore, may be called the (comparatively) exact physical sciences. In the other group, which contains geology, mineralogy, meteorology, etc., precise measurement is rarely possible. The important science of chemistry is placed in both groups; some parts of the science being the result of measurement, other parts not so. The contrast between the two groups is marked. Wherever exact measurement and mathematical calculation are possible, there certain knowledge can be obtained. It must be noted that in physics this exactness is only approximate, not as in mathematics perfect. In physics a yard is meant to be a yard, and all yards to be equal; but a yard-measure will vary in length with changes of temperature

and moisture; and in the employment of the measure human hands and eyes are liable to slight errors. To measure an astronomical base-line a thousand miles long is a serious undertaking. The exactness of physical science therefore is not ideally perfect, like that of mathematics; but for practical purposes it is accepted as correct. Compare now astronomy with geology. In astronomy the length of the year is calculated to the fraction of an hour; the beginning and duration of an eclipse are foretold to the minute. Geological time, on the contrary, is vague. The point of interest for us is this: knowledge and hypothesis are found in all the sciences, but in the exact sciences there is more knowledge; in those not so exact more hypothesis. As we are concerned only with knowledge, our attention must be directed chiefly to the exact sciences.

Each science relates to one selected subject-matter. The several sciences of inorganic matter divide among themselves the immense and endlessly diversified mass which is called the material world. The division appears to have been made in conformity with real distinctions in things; but we must remember that it was made in accordance with the state of science at the time, and is liable to revision as science advances. Moreover, it is important to note that these divisions are not found in nature, but are mentally determined. In some cases they overlap. All masses of matter fall both under physics and under chemistry. In physics, matter in general without distinction of kinds is studied: in chemistry, the affinities of different kinds of matter are investigated. It is the same matter in both sciences. Chemistry is an inorganic science, but it includes also organic chemistry—which deals with the substances of organisms, though only as they are apart from life. The fact we have to bear in mind is this: the sciences of nature are not perfect transcripts of nature as it is, but abstract conceptions of different portions of the framework or body of nature, which science mentally dissects or takes to pieces. This scientific division of what nature presents in a concrete mass is thought to be justified by pointing out that the natural laws of one science operate conjointly with those of another. What is given to consciousness is an indefinite

or infinite mass of matter, manifesting itself by innumerable changes of agglomeration and separation, of forms and positions, of colours, sounds, smells, tastes, pressures, resistances. The sciences proceed by concentrating attention on one set or group of changes to the exclusion of the rest. Science therefore is the work of mental abstraction: an abstraction to which there is no visible and tangible counterpart in nature. The homogeneous matter of physics cannot be perceived in nature; for all perceived matter is one or other of the chemical elements, or a compound of two or more. The inorganic matter cannot be found apart from the organic. This assertion may appear to be set aside by geology, which carries the mind back to an epoch of extreme heat when life could not have existed. But those who adduce this argument overlook the fact that in the period of the igneous rocks, there was not only no life, but also no science. They overlook also the fact that science is based upon the sensuous experience of eyes, hands and the human body generally. The matter known to science is visible and tangible matter. True, there are invisible *forces;* but these likewise are only known through visible and other sensible effects. It is not our concern now to discuss the whole problem. We are simply interested here in observing the nature of science: which is evidently, in physics and in chemistry, what we saw it to be in mathematics—an arbitrary selection of some one group of facts and changes for examination and explanation apart from other groups. The abstract character of science is evident.

In the inorganic sciences the homogeneity of science with common knowledge is plain enough. Like common knowledge these sciences are based upon unquestioning assumption of the three fundamental certitudes. The scient here is an observer, looking from the outside on things and their changes, with which he interferes, indeed, to try his own planned experiments; but even so, he ignores his own personality and takes into account only the effects of the experiment upon the materials employed. In these sciences, as in mathematics, there is no gap between common and scientific knowledge, but a gradual transition from one to the other, recognisable in the history of the sciences and

in that of the development of the individual mind. Take astronomy, for example. The data of astronomy are visible facts—the alternations of day and night, the rising and setting of the sun, the changes of the moon, the different heights of the sun at different seasons, and the places of his rising and setting, the lengthening and shortening of the day, the background of the stars upon which the paths of sun, moon and planets can be traced. All these are still to-day, as they were thousands of years ago to Egyptian priests and Chaldaean magi, the primitive data of astronomy. The first scientific observation in astronomy obviously was that the sun rises in the east and disappears in the west. The first attempt at scientific explanation asserted, we are told by Aristotle, that in some manner the sun was conveyed back by night across the northern regions, and that darkness was due to lofty mountains, which screened off the sunbeams during the voyage. Afterwards it was thought more rational to suppose that the sun pursued his course below the earth during the night. This was an important step in comprehending the constitution of the universe.[1] From this to the Copernican theory was a long, arduous and glorious progress; and still astronomy marches forward on her celestial road. Like astronomy, physics and chemistry had their origin in common knowledge, and maintain their community with it. Every teacher employs by preference illustrations taken from the common experience of everyday life to set forth the primary truths of his science. We need not occupy our space by giving instances here; but must notice a possible objection to the homogeneity of knowledge, drawn from the fact that science not only improves and extends common knowledge, but sometimes actually reverses it; what was once commonly supposed to be knowledge being scientifically proved to be error. To common sense it appeared to be an observed fact that heavy bodies fall faster than light bodies; a leaden bullet dropping to the ground in less time than a feather or a snowflake. The most notable reversal of knowledge is the change from geocentric to heliocentric astronomy. How can we maintain the continuity and homo-

[1] *The Story of the Heavens*, by Sir Robert Ball, ed. 1897, pp. 2 and 3.

geneity of common and scientific knowledge if the one thus flatly contradicts the other?

To exaggerate the importance of a signal reversal such as this is perhaps impossible. Its effect is felt far beyond the area of the particular science to which it refers, and extends outside the range of science into the regions of metaphysics and theology. It may be, however, that the true and full significance of such a reversal is not always perceived. We shall have to return to it again, when we try to estimate science as a whole. At present, however, not what is known, but the way or kind of knowing is the point in question. Now, whatever this way or kind may be, the fact that the human mind is not infallible is patent and undisputed. Errors have existed, have been detected. The mere fact of error does not affect this manner or way of knowing; for error is not knowledge but its contrary. Its discovery is a proof that we did not know, where we supposed ourselves to possess knowledge. The error itself can throw no light upon the knowing faculty or operation; nor any discredit, unless the error is shown to have arisen in consequence of the way or manner of knowing in course of which it was entertained. But there are not two ways of knowing to be considered. Our investigation has only perceived one way—the intelligent interpretation of facts by logical reasoning. The same way or method was followed first by the Ptolemaic, afterwards by the Copernican astronomy. Let us go even further back. The naive, primitive theory that the sun was conveyed by the chariot and horses of Vulcan under the sea, and the other hypothesis that by some unknown agency it returned behind the northern mountains, were both based upon the observed fact that the sun having sunk behind the western horizon reappeared in the east. The revolution of the heavenly spheres round the central earth was a new scientific solution of the problem which displaced the earlier theories. Where was the flaw in this? The error lay in overlooking, or positively rejecting a possible alternative theory. Apparent movement of an object, or of a number of objects, may be accounted for by the real movement of the objects, or by the real movement of the spectator. Familiar as this alternative is, it is not surprising that the human mind was slow

to conceive the possibility of the earth's motion. Even now to us who know the contrary, the earth seems to be at rest, the heavens seem to move round it. Instead of suggesting a different kind of knowledge, the Copernican conception of the solar system is one of the best illustrations of knowledge as it is ordinarily understood. Common knowledge and science are both interpretations of the data of consciousness, and both contain an element of hypothesis. This hypothetical element is not knowledge, but if it appears to be in accordance with the data, to account for them satisfactorily and is in no way called in question, it is accepted as knowledge. So the Ptolemaic astronomy was accepted for a thousand years: to be at length ousted by the Copernican theory. The Copernican theory was based upon the same facts as the theory which it displaced; its essence being the acceptance of the alternative which had been rejected by Ptolemy. Its confirmation by Newton's theory of gravitation came later; at first the Copernican theory was simply an hypothesis, which was attended by fewer difficulties than the Ptolemaic system. There is, then, here no ground whatever for doubting the homogeneity of knowledge; but a warning of the danger of too hastily assuming hypothesis to be knowledge.

In regard to the nature of knowledge, physical science contributes a suggestion, partly resembling and partly differing from that which we derived from mathematics. In mathematics we found a mysterious necessity which forces all who pursue the science to know the same truths; and thence arose the suggestion of one system of ideal truth. In physical science, explorers of nature are confronted by the hard reality of external fact, not less compulsory than the mathematical idealities. In common knowledge and in the sciences we cannot think as we please: imagination may frame as many hypotheses as it can, but to *know*, the mind must adhere to the facts, must reason upon these, and bring all hypotheses to these for verification. This is just the meaning of the definition of knowledge—thought in conformity with fact. What is this fact or reality? It differs from the mathematical ideality, in that it is not the work of the mind, and that the mind cannot conceive what it is. If we reflect deeply on the mathematical

data, these also are found to be utterly mysterious; but, at first, points, lines, figures, magnitudes, numbers, seem to be easily definable and clearly comprehensible. Space and time also, however mysterious ultimately, are simple abstract ideas; that is, each is one not a complex, each is uniform throughout, each is apparently complete and sufficient in itself, not requiring anything as basis or complement. Thus the notion of one system of mathematical truth easily arises. Real facts and changes come upon the mind from without: they often come with a shock: they are not made by our thinking; on the contrary they compel our thinking to conform to them. Moreover they are many, complex, variable: among them nothing seems permanent: even those things which to the pre-scientific ages seemed permanent, the everlasting hills, the changeless ocean, the solid earth itself, lose their permanence to the far-seeing vision of modern science. Here we cannot say that the aspect of nature as it immediately strikes the conscious mind suggests at once a unity, a rational system. The sciences begin by apportioning nature among them, or more correctly, each science began by appropriating as its own some fragment of nature abstracted from the whole, and went on its own independent way. Only later, only in recent years, have we heard of a classified scheme of the sciences. And in recent years the conception has arisen and gained general acceptance that the material universe, at least, is one mechanical and rational system. But this conception cannot be said to belong to any one science; rather it falls outside all the sciences and belongs to philosophy.

The great thought which a consideration of the physical sciences contributes to our inquiry into the nature of knowledge is this: knowing, though the activity of mind is dependent for its existence upon what is not the mind, upon objects, upon the given, or what, in a word, we call reality. In this respect mathematics is exceptional, and forms a class by itself—if indeed it is an exception. The lines and numbers of mathematics are ideal; but yet they were undoubtedly abstracted in the first instance from real objects; and may thus be brought under the general rule. But in any case mathematics may be put on one side; and we may say generally that all real

concrete knowledge is not subjective alone ; subjective it must be ; but it cannot be only subjective ; it has, and cannot exist without, its object, or objects. And these objects come to the mind, are set before the mind, are not the creations of the mind. They are real objects and are supreme in knowledge, so far as our knowing is compelled to conform to them. In mathematics we learned that something *in* the mind, in its own nature, compels it to know, *i.e.*, to think the truth. From physics we learn that a somewhat external to the mind, a somewhat not of the nature of mind, compels us to know, *i.e.*, to think in conformity to *it*.

CHAPTER IV.

BIOLOGY.

IN biology science entering a new field gradually approaches an important transition to a new character. Hitherto, in the groups of sciences previously reviewed, we have seen that science is abstract and objective, leaving the subjective factor of knowledge out of its account. The same objective character is maintained in biology also as long as possible. Biology is not a science but an appropriate name for a group of sciences—botany, zoology, anatomy, physiology and others. This group affords striking illustrations of the arbitrary selection of subject-matter, which we have seen is one mark of a science. Botany and zoology at first sight appear to be exceptions : their provinces being the apparently natural divisions of living things, the vegetable and animal kingdoms. Since King Solomon spoke of plants, from the cedar of Lebanon to the hyssop on the wall, and from the days of Aristotle who enlarged his knowledge of the animal world by aid of the specimens sent to him from lands conquered by the great Alexander, these two sciences took their stand on either side of what appeared to be a fundamental and impassable distinction in the nature of their subject-matters. But the progress of the sciences themselves has made it clear that the supposed impassable gulf does not exist. Low down in the scale, vegetables and animals are much alike ; and the lowest forms of life cannot with certainty be referred to either division. Thus it appears that nature does not ratify the scientific distinction. Living matter at its first appearance on the scene cannot be differentiated into two classes. One original matter, called protoplasm, seems to have developed along two diverging lines, plainly diverse in their later stages, but springing nevertheless from one and the same source. This

observation does not impugn the genuineness of the two sciences. On the contrary, a science is the selection of a portion out of the great whole of natural being for separate study; without any pretence at the outset to guarantee a natural separation of the part from other parts. For the purposes and operations of science the distinction of botany from zoology is plain and real enough. A caterpillar is different from a cabbage. Yet the difference is not absolute. The caterpillar eats the cabbage leaf; and cabbage-substance becomes caterpillar-substance. So the whole animal world is in a way a transformation of the vegetable world. Not only have the two lines of development a common origin; they are connected throughout their course. At present there is no knowledge that living matter was originated from inorganic matter by inorganic forces alone; but it is known that protoplasm contains chemical elements, and no element unknown to chemistry. The suggestion that possibly the gap between the organic and the inorganic may one day disappear, as that between the vegetable and the animal has already disappeared, is now familiar. There would remain, if this chasm were bridged over, only the gulf between the ideal subject-matter of mathematics and the sensuous realities of physics and biology to be closed up: then the underlying substance or matter of all the sciences hitherto mentioned would be one and homogeneous. This may seem a remote and improbable, if not a wild, speculation; but such speculations have been eagerly entertained. When we come to speak of metaphysics, some attention must be paid to them. Meantime we are dealing with science; and all mere hypotheses are to be excluded.

Other biological sciences—anatomy, physiology, embryology, for instance—are plainly artificial, not natural, divisions. Anatomy, that is "dissection" or "cutting up," is a queer name for a science which does not even indicate its subject-matter. The science however is not harmed by its singular appellation; its subject-matter, the component parts of the human body and the manner of their connection, is fairly definite. But its separation from physiology is arbitrary. Physiology has the same parts of the same body within its

province, and directs attention to the living states and functions of the parts, having however a much wider scope, extending its range over the whole vegetable and animal kingdoms, and conducting its researches from the single cell to the highest organism. Embryology has to do with one stage in the life-history of some species. Manifestly these sciences owe their particular definitions to their historical origins and to human convenience. The innumerable species of living bodies, and the immense variety of their developments in successive stages, are almost beyond the capacity of human science: and the work has been undertaken piece-meal, as opportunity and ability suggested. Our remarks, therefore, are in no wise intended to cast slight upon any of these rich and fruitful sciences: the character of their divisions has been noticed, simply because it illustrates the arbitrary selection by which the several sciences were constituted. The fact is, man has studied his world as best he could, and increased his knowledge as the generations rolled on. If the whole field were now re-surveyed in the light of all the knowledge now possessed, some other arrangement and terminology might be found more appropriate than that which history has given us.

As to the continuity and homogeneity of biological science with ordinary knowledge there is no dispute. The sciences grew out of common knowledge. Hunters and fishermen, shepherds and farmers, butchers, augurs and sacrificing priests were the first rough and superficial students of biology. Their rude knowledge, however inferior, has not been contradicted, only improved and extended by Linnæus, Harvey, Cuvier and other illustrious scients. In our own day, the great Darwin eagerly collected information from pigeon-fanciers and cattle-breeders. Although biology ultimately leads to the great transition we are presently to contemplate, at first, and still throughout the greater part of its area, it is a science on the same plane, of the same character, as astronomy, physics, chemistry, and other inorganic sciences. Its basis is an unquestioning belief in the three fundamental certitudes: its mental attitude is thoroughly objective: its methods are observation and experiment, and the employment of reason in framing hypotheses in accordance with its own objective view

of the world. For the most part, the biologist no more troubles himself to reflect upon his own subjectivity than does the astronomer or the geologist. In this maintenance of the objective attitude, biology is one with the sciences already passed under review, and with most of our common knowledge. The physiologist observes the varieties of size, shape, constitution, behaviour, of a material substance, protoplasm, differing from inorganic matter by the presence of an unknown quality called life, exhibiting an infinite number of variations and peculiarities; nevertheless throughout *material*, that is, visible and tangible, either actually or conceivably. His aim is to ascertain the laws of the constitution of each kind of plant and animal, and of the changes which happen in each individual of each kind. Each individual living thing is conceived as a mass of organised matter; and all its changes as movements of matter, either of the organism as a whole, or of some of its parts, whether internally in relation to each other, or externally in relation to outside matter. Thus one phrase, matter in motion, or the movement of matter, expresses the object before the physiologist's mind—albeit this is living matter, and thus more complex and more mysterious than inorganic matter, seeing that it contains a new unknown quality. As for *mind*, that does not enter into the science; the *mind* is the observer himself, or the subjective side of his mental activity, which he, like the physicist, leaves out of his science, either ignoring it altogether, or arbitrarily handing it over to the psychologist and the metaphysician.

At last, however, the physiologist is forced to modify his objective attitude, at least so far as to admit within the range of his science some recognition of the subjective factor of knowledge. He is driven to this when he tries to understand the human body. In this highly complex organism, anatomy lays bare what may be regarded as several systems combined in the one organism; such as (1) the skin, hair, nails, etc., (2) the bones and muscles; (3) the heart, veins and arteries, with the blood; (4) the lungs and air passages; (5) the stomach and alimentary canal; (6) the organs for reproduction of the species; (7) the brain and nervous system. The physiologist is requested to forgive any blunder or omission in this catalogue, which

does not pretend to be technically perfect, but will serve our purpose. The point we have to indicate is this: each system has its structure and its function or work, that is, some one end, or several ends, which it fulfils. The heart may be regarded as a self-acting force-pump which makes the blood circulate throughout the body, bringing fresh material, and removing waste matter. The lungs convey oxygen to the blood, and respire carbon-dioxide. The stomach receives food prepared by the mouth, and transmutes it into chyle, to be passed into the blood. All these processes are conceivable as movements of matter into and out from the body; and can be contemplated from the objective point of view. When, however, the physiologist comes to consider the function of the brain, he finds himself confronted by facts which cannot be treated as mere movements of matter; which, indeed, he cannot positively assert to be either movements or material: although, of course, it is open to him to imagine, or to try to imagine, them as such. Let us consider these new facts.

A detailed description of the brain and its appendages would occupy too much space, were I qualified to give it. It is enough for us to take the main facts which are universally accepted. The function of the nervous system is to connect and co-ordinate all the other systems so that each and all may work together for the common ends of the whole body. This requires further explanation. The body consists of innumerable cells; and we are taught that each cell has a life of its own. Plants, and some of the lower forms of animals, have no nervous system. Therefore we are not to suppose that everything which goes on in the body is regulated by nervous action. But in a general way all the organs are connected with, affect, or are affected by, the nervous system. Possibly the stomach digests food in a normal manner without interference with or from the nerves; but if the stomach is overloaded with indigestible matter, it lets the brain know by means of the nerves—pain, nightmare, or other discomfort being the result. In such a case the brain cannot send down orders to the stomach to keep quiet and to dispose of its superfluous material without annoying the other organs of the body; it can only remember the trouble in order to prevent the mouth in future

from sending down an excessive supply, or an unwholesome kind, of food. Allowing, then, a possibly independent activity of some portions of the body, the nervous system has the duty of connecting the organs of the body together, of carrying information from one part to another, and of, to some extent, controlling the parts and the whole body. In other words, the functions of the brain, so far as physiology is obliged to notice them, comprehend (1) sensation, (2) intelligence, (3) volition.

In the preceding paragraph what may be regarded as figurative language has been freely employed. I suppose that it is impossible to describe biological facts without a liberal use of such language. To avoid risks of error, let us try to express some of the certainties of physiology without any figures of speech. The brain is the organ of sensation. Plants, we think, do not feel. Some of the lower animals which have no nerves appear to feel. Therefore the common-sense notion that all parts of the human body, except the hair and nails, feel is not evidently wrong. But the teaching of physiology is that sensation and feeling are located in the brain. One unawares touches hot iron: instantly pain is felt; and the hand is withdrawn, involuntarily or instinctively. A gnat settles on the back of one hand and draws blood; instantly the sting draws attention to the place, and the other hand strikes off the offending insect. In both cases the unscientific observer attributes the feeling to the place of contact with the external thing, iron or gnat, and the movement to the muscles of hand and arm, whether instinctively or volitionally. The physiologist tells us that we are wrong: that the pain is felt in or by the brain, that what happens is this: on finger-tip touching iron, a nerve-fibre carried the effect to the brain; something happened in the brain, which is called sensation; sensation produced, or was accompanied by, a movement or agitation which sent a return current down another nerve or nerves to the muscles of hand and arm, these muscles then contracted, and the hand moved. The case of the sting was more complex; in this instance, attention was aroused, the eyes were moved to see what was going on; there was will and purpose before the blow fell. For these larger operations, the physiologist supposes, a larger discharge of nervous energy,

and its passage through several nerves. This is a mixture of hypotheses and knowledge. The terms, nervous current, nervous energy, nervous discharge, do not stand for actual knowledge. They are convenient expressions, borrowed from electricity, for the fact that there is some unknown *happening* in nerves and brain. But the fact that the brain and the nerves are concerned in the case is proved by the observations that if the nerves are cut, the feelings and movements do not occur; and also because the feelings do sometimes occur without any external stimulus—but we have no need to go into details. Physiology is clear and certain as to the fact that the brain is the organ of sensation.

Now sensation is a new kind of fact, which is neither physical, nor physiological, so long as physiology is a purely objective science. The physiologist, indeed, does not easily recognise this interference with his scientific attitude. As has been so often pointed out, science is based on the fundamental certitudes of common knowledge. Everyone knows that animals *feel*. The physiologist appeals to this common certainty so far as is necessary; and lightly passes over, perhaps does not notice, the important fact that he is turning his observation away from the external world of real things, and reflecting upon the subjective reality of his own mental being. Nevertheless this is actually the fact. He has forsaken the objective attitude of the scientific spectator of an external universe independent of the mind; and is now interpreting the universe by means of a conception derived wholly and solely from his own mind. For what is sensation? If the scient uses the word at all, he must have some meaning for it: he must refer it to some known event or fact. And here is the incontrovertible certainty; sensation means *my* sensation to me; means *your* sensation to you. The physiologist attributes *feeling* to animals: he attributes feeling to the human body; he dissects that body, and discovers brain and nerves, which he demonstrates to be the organs of *feeling*. This *feeling*, this *sensation*, he knows only because he himself feels, sees, hears, smells, etc. Sensation is subjective, a quality of mind, of the self; it is a new kind of being, unrecognised in the inorganic sciences, unrecognised in biology, until this point is

reached. When once it is recognised, science undergoes a change: it is not what it was before: it has ceased to be purely objective.

Still more evidently are intelligence and volition ultra-physical facts. Up to a certain point, the movements which take place in the human body and the movements of the human body in relation to the external world can be conceived as a continuation of merely physical laws, somewhat differentiated by the presence of the unknown factor called life, but yet not fundamentally diverse. The recoil of the finger from hot iron, the falling of the eyelids before a threatened blow, even the brushing away of the stinging gnat, may be explained as automatic actions of the reflex sort. The nervous system may be regarded as an apparatus or machine which, touched from without or from within, works as it is made to work, and knows nothing of its own operations; or, at least, its consciousness may be looked upon as a surplusage, of no value, and no significance. No doubt it is putting a strain on one's powers to accomplish this mental feat: still with an effort it can be done. The facts which involve intelligence or knowledge cannot be treated in this way. There are instinctive and non-volitional movements of the human body; but by far the greater number of movements are guided by intelligent purpose and determined by will. Here we are carried altogether outside the physical sphere. A farmer, for instance, ploughing his land for a future crop of wheat, performs a series of movements, determined by ideas which have no physical counterparts: he imagines time yet future, a growing crop where the seed is not yet sown, a golden harvest which exists only in his imagination. Intelligence and volition are not physical entities, are not mere movements of protoplasmic matter. What, then, are they? As before, the physiologist has no resource except his own mental experience for their description. Only so have they meaning for him.

We see, then, that in biology we have reached a point of transition. Here we must quit the region of physical science, and enter a region which has been called by various names; let us, for the present, speak of the group of the mental sciences.

CHAPTER V.

THE MENTAL SCIENCES.

NOW we have to plunge into a thicket of difficulties, and somehow to force a path through. In accordance with the old notion that the universe consists of two substances, matter and spirit or mind, we should expect to find the sciences fall of themselves into two divisions: those relating to matter, and those relating to mind. But the principle fails us at the very first application. Mathematics is the oldest and the most perfect of the sciences—to which division does it belong? Not to matter: for its objects are immaterial: its points, lines, surfaces, solids, numbers, fractions, powers, all are invisible, intangible, incorporeal. Not to mind: for in mathematics the mind is never mentioned: its objects, or subject-matter, are space and number. Mind, so far as we know, is neither spatial nor numerical. But mathematics is neither mental nor material; it is ideal; it has a unique position and character. Passing on, we seem to have a plain course, so long as we keep to material things, celestial and terrestrial. A list of physical sciences from astronomy to zoology can be drawn up. Not so in the case of the sciences of mind. Here we can name Logic, Ethics, Philology, History, Political Economy, Jurisprudence, Sociology, etc., as sciences actually existing and generally recognised, whether the name *science* is appropriate to them or not: but whatever we include or exclude, the list must always end with *et cætera*. We may add Psychology, Aesthetics, Archæology, Anthropology, Ethnology, Phrenology, Comparative Religion, Theosophy, etc. To choose a subject-matter and affix the termination "ology" does not really constitute a *science*. We can at once fearlessly strike out some mere pretenders to the name, Phrenology and Theosophy for instance. In other

cases though real knowledge is possessed, as in History and Aesthetics, the existence of *scientific* knowledge is doubtful. And where the claim to be *science* seems substantial, as in Jurisprudence, Philology, and perhaps Political Economy, it is questionable whether these are purely mental sciences. Mixed sciences they might be called; for they relate to corporeal things, vocal organs, land, tools, the possession of property, etc. Instead of a dual division based upon mind and matter, a tri-partite division of sciences relating to the self, those relating to other selves, and those relating to the external world, would be more convenient. But, after all, the sciences of mind are sciences of man; and man is body and mind.

The classification of the sciences, however, is comparatively unimportant; while the list of the sciences is indefinite, and the sciences that we have are all unfinished, the question of their arrangement in a system may well be postponed. Our pressing question at this point is this—Is there any *science* of mind? We are in this difficulty: we have recognised that knowledge is one, homogeneous; we have also recognised that science is a superior kind of knowledge. Knowledge and science are the same, and are not the same. The contradiction need not frighten us: both assertions may be true: for we cannot think of any unity which does not contain differences. Ice is the same as water, and water is the same as steam; yet the three are different. Matter may be homogeneous, but it has infinite varieties. What concerns us is this: *if* we recognise a definite distinction of quality, we must stick to it: it must not be recognised and ignored at our pleasure. Science, we have agreed, is superior to common knowledge. Observing the character of science in those sciences which are indisputably such, we discerned that (1) each science has its definite subject-matter; (2) this subject-matter is regarded *objectively*, that is, as though perceived and known by an abstract spectator; (3) the three fundamental certitudes are tacitly accepted as its basis; (4) the science is a real increase of knowledge. If it be objected that this definition of science is derived from the sciences of matter, we reply that it is taken from those sciences the splendid progress

of which has been the origin of the special use of the word science; and if the given definition of science is not suitable to other sciences, then either these are not sciences, or science must cease to enjoy the distinctive superiority which is claimed for it.

We are not concerned either to exalt or to humble *science*. The fact being that *science* is employed with a meaning which distinguishes it from some other knowledge, our business is to fix that meaning definitely, and then to consider the amount and kind of knowledge which is not *science*. Common knowledge is, as we have seen, in all cases the antecedent of the sciences. Consequently, all that part of common knowledge which is accepted by *science* is essentially of the same character. It has, in fact, three out of the four marks: it is abstract, objective, and based on the three certitudes. This part of common knowledge is only distinguished from *science* by its wanting the fourth mark; it is inferior, because it has not been refined and extended by exact measurements, planned experiments and logical reasoning. This part of common knowledge may be called unscientific, or better, pre-scientific. There is also a part of common knowledge which has not yet been brought into a scientific form: and this failure is not due to inattention, to neglect of opportunities of observation; but apparently to inherent difficulties in the nature of the subject-matter. Take politics, for example. There is no lack of interest in politics. A considerable number of the most intellectual of mankind devote themselves to the study of politics. Opportunities for observation are continuous, and for experiment not infrequent. And yet no one pretends that there is a *science* of politics; and this deficiency is the more conspicuous because *scients* are as closely interested in politics as any other class of men who are not professional politicians. It seems, then, that not all our knowledge is equally reducible to scientific form. When we have once recognised this fact we perceive that a new question arises. Hitherto it has been widely, if not universally, assumed that any sort of subject-matter will furnish a *science* if only it is treated in a scientific way and with sufficient perseverance. But now we must ask —is there not some knowledge which from its nature cannot

become *science?* If there is, such knowledge should not be called unscientific—a term of reproach—but rather extra-scientific, as lying outside the area accessible to *science*. History, literature, art, poetry, belong to this region. Knowledge is possible, and is actually possessed, in all these fields of thought: but *science* is not at home there.

Evidently we have here come upon an observation of immense importance for our inquiry. We came to the conclusion that human knowledge is essentially one; that there are not two kinds of knowledge. Proceeding in our investigation, *science* appeared to be this knowledge, so refined, so extended, so gloriously successful, that it almost seemed a new kind of knowledge. But, adhering to the homogeneity of knowledge, all other knowledge not yet elevated to *science* seemed low, poor, coarse, comparatively worthless. Now we see reason to suspect a mistake here. There may be knowledge of the highest value which never has been, and never can be, worked up in the mills of *science* and branded with its marks. This extra-scientific knowledge, at all events, has a claim to consideration; and we shall have to consider it to make our survey of knowledge complete. But in the meantime these reflections lead us to another thought. We have felt the difficulty of giving a list of the mental sciences. What if the root of this difficulty should lie deeper than we imagined? Is it, then, possible that there are no mental sciences? It may be that the so-called mental sciences cannot be brought into line with the physical sciences, because the so-called mental sciences belong, by the nature of their subject-matter, to the extra-scientific region. On the other hand, it may be that the sciences have been so conspicuously successful, not because of any intrinsic superiority in themselves, but because of the inferiority of their subject-matter.

These suggestions deserve mention as they arise; but this is not the time to follow them up. First of all, we must consider briefly the two mental sciences, logic and ethics, which, if there are any mental *sciences*, undoubtedly belong to the list. Then we must take a general view of *science* before we pass on to psychology.

CHAPTER VI.

LOGIC.

SOME of the old logicians regarded logic as an art rather than a science. Whateley held that it is both a science and an art. Kant described it as a science which "gives a complete exposition and strict proof of the formal rules of all thinking, and nothing more than this".[1] In recent attempts to arrange the sciences systematically, we find logic and mathematics bracketed together as the abstract sciences.

Whether an art or a science, logic has its definite subject-matter. As the art of navigation teaches how to guide a ship across the sea, and the art of fencing how to defend one's own body and to pierce that of one's adversary, so the art of logic professes to teach us how to reason correctly. Reasoning, then, or perhaps more exactly, the expression of reasoning in language, is subject-matter of the syllogistic logic, which treats of words or names, of propositions or judgments, and of proofs or syllogisms. In this logic the method or process of reasoning is alone dealt with. Although terms and propositions are passed under review, logic does not supply first premises. These are supposed to be given as in their nature self-evident, or universally believed by rational minds. The business of logic is to discuss the various ways in which propositions can be combined, so as to derive from them a new proposition which shall be demonstrably true and an enlargement of knowledge. But, as Kant pointed out, logic does not go beyond the mere discovery of the right *forms* of reasoning—blank-forms we may call them. In logical treatises these forms are expressed by the employment of the letters of the alphabet as symbols of unknown terms. For instance—

All A is B, C is B, therefore C is A,

[1] *Kritik der reinen Vernunft*, preface to sec. edit.

is a *form* of the syllogism; the meaning of which is this, "whatsoever is true of the whole of a class, is true of every individual belonging to the class." The ordinary mind grasps the meaning more quickly if a concrete illustration is given, as *e.g.*, "All men are mortal; kings are men; therefore kings are mortal". What logic is concerned with, however, is not the truth of this or that universal proposition, or this or that particular proposition, but with the way in which the mind reasons from the two propositions to the third. On this account logic has been called "the science of inference".

The Aristotelian logic is well-nigh obsolete; and to describe it at length would be tedious. Suffice it to say, that for two thousand years it was considered as the true and sufficient exposition of the actual operation of the human mind in its discovery of inferential truth. Of course it was not asserted that in every case the whole syllogism with its three propositions must be fully expressed. But it was believed that in essence reasoning is necessarily syllogistic; and that all its other forms can be justified only because they admit of being filled up, or rearranged, so as to become syllogisms. This syllogistic logic seems to us barren and meagre, but to Kant it appeared to have been perfected at one stroke by Aristotle, and henceforth to have made no progress, and to have needed none. Schopenhauer, on the contrary, regarded logic as a useless science—true as far as it goes, and interesting as an exhibition of mental process—but of no value; because every one naturally reasons correctly, without any acquaintance with logic. As a matter of fact, logic is not taught in our schools; yet children can reason: so can savages, so can even animals. On the other hand, logicians, even when writing upon logic, can reason badly. It would seem, therefore, that if the matter were to be settled by taking a ballot, the majority of votes would be cast for Schopenhauer's view.

Logic, the logic of Aristotle, is clearly very dissimilar in several respects from the other sciences. Its non-progressive character; the absence of increase of knowledge; and, especially, its lack of an *objective* subject-matter; all mark it off as distinct in character. Even mathematics, which has no concrete subject-matter, has ideal objects, which are capable of exact

definition. Logic has no *objects*. In all the sciences we have *known things*, whether of the mind, the points, lines, etc., of mathematics, or the material masses of physics, the elements of chemistry, the plants and animals of biology. In logic it is the act, process, method of reasoning, which is under consideration. It is not words, names, as such; nor propositions, as such. Whatever word is uttered, we have to get its meaning from common knowledge, from science, or from direct examination of the object to which it points, or by explanation furnished to us by the user of the words. It is not the business of logic to explain the signification of words. Nor does logic furnish us with judgments. Such propositions as "all men are mortal," "iron is a metal," are logical in form, but they were not originated by logic, they do not stand upon a purely logical basis. Neither words nor propositions are the objects, or subject-matter, treated of in the science of logic. That art or science considers words and propositions only as constituents in an argument or syllogism. The one *object* of logic is the reasoning activity itself: the thinking mind criticising its own thinking and reasoning has *itself* for its subject-matter. This subjectivity of logic is, indeed, for Kant the characteristic which placed it from the first and so successfully upon "the sure way of science". In logic the understanding makes abstraction from all objects of cognition, and has nothing else to deal with except itself and its form. The business of logic is not to discover truth, not to acquire knowledge, not to pronounce any judgment as to matters of fact or existence, but to set forth the right rules of thinking and judging, which right rules being actually followed, whether knowingly or unknowingly, in the different sciences lead to real concrete knowledge.

Having thus grasped the notion of logic, we perceive at once that the science—if it be a science—of logic is unique. However narrow its extent, however few its certainties, however incapable it may be of progress, logic relates to that great mysterious universal fact which lies at the basis of all the sciences: the human mind *can* reason, *can* infer, *can* come to true conclusions. And this human mind is not mine

alone, nor yours alone; but all men reason in the same way, on the same fundamental principles. Whether the syllogistic logic is the full, true, accurate and perfect exposition of this reasoning, or whether it is supplemented by other methods, in either case the great fact is that men reason, and not arbitrarily but according to law, a law fixed in their own mental constitution, a law conformable also to the external facts of nature, or to which external facts conform. Logic is meagre, narrow, abstract—empty of living flesh-and-blood reality: but also logic is the underlying condition of all the sciences. Logic by itself teaches nothing; but apply logic, if only to such unsubstantial entities as the simple ideas of numbers, lines, angles, etc., and behold the marvellous increase of knowledge which results. The science of mathematics is the crowning glory of pure logic: it is the logical science ***par excellence***. But not mathematics only—common knowledge, and all the sciences, rest upon logic. That is—upon this great fact that men can reason correctly, that we do reason, not as each one pleases, but according to a law which works in all of us. Whether this law is yet fully understood or not, that such a law exists is proved by its results; and logic, the logic of Aristotle, was the best exposition of it which the master-mind of Greece could give; and it ruled the European mind for millenniums. We may compare logic among the sciences to the human skeleton in the living body. The great majority of mankind think rarely of their own bones, and few of us know how many there are and how they are joined. We can run, walk, jump, ride, swim, work and play, without troubling ourselves to learn about our skeletons; we leave it to anatomists to lay the skeleton bare and study its connections. So we can all use our reason and acquire knowledge of many kinds without studying logic; but the great fact that our reason works according to law is the support and strength of all our mental activity.

Another dissimilarity between logic and the sciences is the lack of unanimity among logicians. Unanimity is one of the hall-marks of a science. This indeed must not be insisted upon in an absolute way. The sciences make progress; old theories are left behind, even contradicted, as the geocentric

astronomy: new theories arise, and are not demonstrated in a day. Still, reasonable allowances being made, we expect a science to be possessed of a solid centre of universally accepted certainties, whatever differences of opinion may exist as to its hypotheses. And this was the case in regard to logic, from Aristotle to Kant, and later. During the second half of the nineteenth century, however, this state of things has changed. First, Mill introduced his "logic of induction" as the complement of the old deductive logic of Aristotle. In this case there was no defection from the old syllogistic logic: that was still upheld as good and true so far as it went. But modern science proceeds by induction, and Mill undertook to supply a new department of logic to meet its needs. In the old logic induction was treated as merely an abbreviated syllogism—one of the premises being understood, though not expressed. Mill endeavoured to construct a new inductive logic, parallel to the old deductive method, by means of which science is to be entitled to infer a universal conclusion from a particular premiss, or premises. For example, "*some* whales are mammals"—this is known by observation; the zoologist asserts that "*all* whales are mammals". Mill tried to make out that the universal statement is *logically* inferred from the known facts. Jevons denied this; he contended that there is and can be only one logical method of reasoning, and that this is deductive—that "induction" is illusion. To me Jevons seems to be in the right. Mill's supposed induction really is deduction from a concealed premiss: namely, that nature is uniform.

In recent years the revolt against the old logic has been more serious. In Germany, Lotze and Sigwart, in England, Bradley and Bosanquet, have essayed to build up the science of logic *de novo* on deeper foundations and on a grander scale than before. To criticise these new systems of logic would necessitate the writing of at least a brief treatise on logic—and space forbids. It is contended, in the first place, that the syllogistic is not the only form of reasoning; and then that it is not the true type of reasoning. More than that: grave insinuations against the authority of the venerable "laws of thought" have been uttered. Not that these new

logical views are only destructive. On the contrary, we cannot but recognise an earnest spirit of inquiry into the meaning and grounds of the principles which underlie all thinking. The whole field of logic is re-surveyed; every land-mark is again carefully defined; and borings are sent down as deep as possible to discover solid bases for the new edifice. But the question is forced upon us—is this science? Is it not rather an intrusion into the region of metaphysics? And, once more, we find a marked dissimilarity between logic and the sciences. All the sciences, from mathematics to physiology, are characterised by a steadfast refusal to enter into metaphysical speculations, and a fixed resolve that metaphysics shall not intrude into their departments. The ancient logic attempted to preserve at least a semblance of this self-restraint. Although in the nature of the case, logic must make some allusion to the laws of thought, to first principles, and self-evident maxims, yet the old logic professed one aim only—to set forth the laws of right reasoning, and left other matters to be dealt with by philosophy. Mill too handed over ultimate questions to metaphysics. The new logic on the contrary deliberately associates itself with metaphysics. A reference to Mr Bosanquet's chapter on the relation of knowledge to its postulates will illustrate this.[1] "It is convenient," he says, "to distinguish the abstract principles or postulates which are thus found to be involved in the nature of knowledge as (1) Formal, (2) Material Postulates." Of the formal postulates the four most notable are "the Law of Identity, the Law of Contradiction, the Law of Excluded Middle, and the Law of Sufficient Reason". These "laws of thought," according to his theory, are not only laws of human thinking, but also laws of the reality about which we think. The Law of Identity "ultimately asserts the thorough-going unity of Reality". It is equivalent to "once true, always true". "Reality is one throughout." "The Law of Contradiction carries us one step farther." "Reality, the Law of Contradiction asserts, is a *consistent* unity." "The principle of Excluded

[1] *Logic; or, The Morphology of Knowledge*, by Bernard Bosanquet, M.A., vol. ii., chap. vii.

Middle ultimately affirms that Reality is not merely one and self-consistent, but is a system of reciprocally determinate parts." The Law of Sufficient Reason means that "Reality being a system of reciprocally determining parts, every part or feature of reality may be regarded as a consequent to which some other part or parts, or ultimately the whole, stands as ground". Again, he says, "In plain English, the Law of Sufficient Reason represents the demand of intelligence for the explanation of everything by something else. And it is plain that in the case of anything but the absolute whole this demand must go on to infinity." To over-estimate the importance of these postulates would be impossible: but here we must not stop to inquire—*dare* we make these postulates? *must* we make them? *are* they first principles and self-evident truths? Mr. Bosanquet does not claim that they are "antecedently furnished" postulates, but that they are "general characteristics of known reality . . . inwoven in the whole texture of the real world". This description seems to suit deductions from, rather than postulates of, all our knowledge. At any rate, if logic depends upon these postulates, it is decidedly metaphysical in character.

We could hardly do justice to Mr. Bosanquet's "material postulates" of knowledge by quotations. These are certainly not less metaphysical than the formal postulates. The new logic is saturated with metaphysical conceptions, and I do not suppose that its teachers will feel in the least aggrieved by the suggestion that their doctrines belong rather to metaphysics than to science.

The preceding remarks refer to English logicians. The German logics, if somewhat less startling in expression, are at bottom equally metaphysical. Let it not be supposed that this characterisation of the new logic is intended to convey a reproach. Of the acuteness of observation, the keen criticism, the breadth of view, and the stimulating suggestiveness of these works, nothing but admiration can be felt. Nevertheless we must recognise the fact that logic in this most recent phase has undergone an immense transformation. From a mere skeleton of the abstract forms of thought, it has expanded into a general criticism of the relation

of thought to reality, and a bold attempt to explain the nature of reality itself. Sooner or later, under the name of logic, metaphysics, or philosophy, this attempt has to be made—if only to discover the impotence of the human intellect to explore the heights and abysses of infinity and eternity. Weaker minds must be thankful for every essay in this direction undertaken by strong intellects inspired by the love of truth. The four writers, to whose works on logic reference has been made, all deserve our gratitude; and I may venture here especially to recommend to inquirers after ultimate verity Sigwart's chapter on the final results of logic.[1]

Perhaps we ought not to omit mention here of the famous "Logic" of Hegel—an extraordinary work which falls outside of all that is generally regarded as logic, although it probably has given the first impulse to the new systems of logic referred to above. The great difficulty of understanding Hegel is notorious; and not less so, the fascination he exercises over some minds, and the immense disgust he has excited in others—in Schopenhauer, for instance. Confessing failure, after several attempts, to master the Hegelian logic, I may venture in some sort to describe its character. This logic appears not to interfere with logic as commonly understood, not to be intended to supply its place; but, leaving the old logic as good and valid for common-sense and for science, it enters upon a fresh survey of the whole field of thought on the basis of all the knowledge hitherto acquired, and as the result of this new analysis proposes a new method of reasoning, the Hegelian dialectic, by which the human mind passes by a series of steps from its emptiest and most abstract conceptions to thoughts called *ideas* and *notions*, which are asserted to be logical necessities and exact counterparts of reality, or, as some interpret, the very reality itself. The process of transition is not that of common logic from a universal to a particular, or from one known truth to another, but rather a progress of growth or evolution from an imperfect, and therefore partially false, conception, to another opposite,

[1] Sigwart's *Logic*, English translation, vol. ii., p. 548.

equally imperfect and partially false, conception, the second of which however is the complement of the first; and thus the two conceptions together give birth to a third, which is the truth of both. Hegel begins with "being"; mere "being" is a mere abstraction, is therefore absolutely negative, and is "just nothing". The truth of "being" and of "nothing" is the unity of the two, and this unity is "becoming". Becoming is "being determinate," "being there and so": and thus "quality". From "quality" the dialectic carries us on to quantity, measure, essence. In essence there is the contradiction of identity and difference; which again unite in the "ground" or "sufficient reason". Here we are in the phenomenal world, the world of appearances, which is the subject-matter of the physical sciences. From this the dialectic passes on to "the notion," to "the absolute," to God. Whole steps have been omitted; but perhaps enough has been said to give some slight conception of the character and claims of the Hegelian logic. Lotze calls Hegel's method "the form of speculative thought . . . which aims at giving final shape to all thinkable matter".[1] Hegel himself distinguishes "three sides" of logical doctrine: (α) the Abstract side, or that of the understanding; (β) the Dialectical, or that of negative reason; (γ) the speculative, or that of positive reason".[2] Perhaps these may be taken as corresponding to (1) the logic of common-sense and the sciences; (2) the logic of criticism and scepticism; (3) the logic of philosophy, of faith, of religion: but one can only venture such an interpretation timidly. Hegel does not mean that there are three logics, but only one logic in three stages. At any rate, we are safe in saying that, with Hegel, logic and philosophy are almost if not quite identical.

What, then, on the whole, must be our conclusion as to logic? Is it art, science, or philosophy? No doubt, as a system of practical rules, a treatise on logic deals with it as an art. And if we take "science" in its literal meaning as knowledge, logic contains some certain knowledge. But if we are to use science in a special sense as denoting a clearly-separate department of knowledge, such as astronomy

[1] Lotze's *System of Philosophy*, Part i., Logic, English translation, p. 147.
[2] *Logic of Hegel*, Wallace's translation, p. 143.

or botany, logic in several respects does not answer to that idea: to call it science with such an implication is a misnomer. Science, in the special sense, means knowledge of some particular kind of objects, which at least apparently, are clearly separable in thought from other kinds. Logic, however, is mixed up with all knowledge; not separable from any. First, subjectively, logic is knowledge of knowing, that is of the knower, of all human minds; secondly, objectively, if logic has objects at all, these are thoughts about each and all kinds of things. Science is particular: logic is universal. Therefore I would prefer to describe logic not as a science but as a portion or sub-division of that knowledge which relates to the three fundamental certitudes, and to the totality of being of which these three certitudes are factors. For this universal knowledge the name now generally adopted is philosophy.

CHAPTER VII.

ETHICS.

A SCIENCE is an arbitrary selection of a particular subject-matter; but not wholly arbitrary, for it is determined by rational considerations. The selection of mere caprice leads only to a pseudo-science. Logic, if restricted to the analysis of reasoning and exposition of its presuppositions and laws, the final criticism of these being left over for metaphysics, may perhaps be accounted a science. In the case of ethics, the grounds for regarding it as a genuine science are still stronger. Reasoning is universal, being involved in all kinds of knowledge; whereas ethics has its clearly-defined department. Even unscientific minds readily discern when any subject-matter is "a question of morals". This ethical subject-matter is a unity—expressed by a single word—the *moral* quality of actions, motives, dispositions, sentiments; or more briefly, of character and conduct. This *moral* quality is otherwise describable as that which makes a mental state or activity right or wrong, virtuous or vicious. Without dogmatising as to its origin or relation to other states of mind, and keeping clear from the hypothesis of *faculties*, or separable organs of mind, the existence of a feeling called conscience, moral sense, feeling of duty or moral obligation, is plainly recognisable. Ethics, of course, is a subjective science; its subject-matter is the manifestations of moral quality in the individual and in the social relations of individuals; but it also is in a way objective, for these manifestations are not exclusively internal, but emerge in speech and action. The virtues and vices are not mere abstractions, but are qualities of definite character, which are in a secondary sense transferred to actions and events. A lie and a murder are objective facts. So far as its definite and separate subject-matter is concerned, ethics has as much right to be deemed a science as chemistry.

Ethics is based upon belief in the three fundamental certitudes. Its knowledge is plainly homogeneous with common knowledge. Its certainties are as sure and strong as any we possess. Ethical maxims are as self-evident as mathematical axioms. Nor is ethical science incapable of progress. The knowledge of right and wrong gradually develops. In the ancient world slavery and polygamy were not seen to be wrong. Toleration is a modern virtue; two or three centuries ago to torture and burn heretics was deemed a moral obligation. Duelling in England is now generally seen to be criminal. Centuries hence war between nations may be universally regarded with horror as an unnatural crime. Ethics is rich in certainties, is fruitful, and is progressive.

One somewhat formidable objection to acknowledging ethics as a science is the lack of perfect unanimity in regard to its contents. To quote from a treatise which makes the scientific character of ethics its basis, Mr. Leslie Stephen points out that "in one sense moralists are almost unanimous; in another sense they are hopelessly discordant. They are unanimous in pronouncing certain classes of conduct to be right and the opposite wrong. No moralist denies that cruelty, falsehood and intemperance are vicious, or that mercy, truth and temperance are virtuous. . . . The difference between different systems is chiefly in the details and special application of generally admitted principles. . . . But if we turn from the matter to the form of morality; if, instead of asking what actions are right and wrong, we ask what is the essence of right and wrong? how do we know right from wrong? why should we seek the right and eschew the wrong?—we are presented with most contradictory answers."[1] This objection against ethics the author attempts to set aside on the plea that it is "by no means peculiar to ethical speculations. On the contrary, we may say it is common to all branches of knowledge. . . . Geometry, for example, involves the conception of space . . . one of the problems upon which metaphysicians have disputed most eagerly and interminably."[2] This answer is insufficient. Metaphysical problems, perhaps insoluble, underlie mathematics and all the sciences; nevertheless, these sciences secure unanimous assent; and this by the simple method of accepting as presuppositions, concepts and postulates, the ultimate consideration of which is relegated to metaphysics. Equal unanimity in ethics can be secured on the same terms. As a matter of fact, however, moralists have not agreed upon their presuppositions, have not handed over their ultimate principles to philosophers. In physics the law of causation is presupposed; neither its "how" nor its "why" is discussed; taking it for granted the student of a physical science discovers causal sequences, and these are his knowledge. In practical ethics the presupposition of free-will occupies a place similar to that of causation in the physical sciences; but in the science of ethics the moralist frequently raises the metaphysical questions as to the nature and even the reality of free-will, and as to its relation to physical causation. Hence the old and tedious controversies between the advocates of free-will and determinism. Mr. Leslie Stephen in his *Science of Ethics* dogmatically intrudes the law of causation into the region of morals, with the result that his book mainly consists of an argument to prove (1) that ethics must be subsumed under this law, and (2) that this subsumption is not subversive of morality. This proceeding is not in accordance with the idea and custom of the sciences. No science attempts to explain the law of causation, nor pretends to fix the range of its application. Each science simply presupposes it for its own purpose, and applies it within its own province. Let ethics be pursued in the same method; let it start with its own natural and necessary presuppositions; and it may attain a unanimity not inferior to that of the other sciences.

Another source of differences of view in ethics is the application of ethical principles to practical life. The certitudes of ethics are moral; the cases to which they are applied are complex, and involve other than moral elements. For instance, justice and mercy are virtues; but in many actual instances it is not easy to decide whether justice should have its course or mercy be allowed to prevail. This is only to say that ethics is, like all science, abstract. In the concrete realities of life, the moral sense is not found alone: it is

[1] *The Science of Ethics*, by Leslie Stephen, 1882, p. 1. [2] *Ibid.*, p. 4.

always alongside of the intelligence which has to measure the facts to which the ethical principles have to be applied. There is an analogy here with the relation between pure and applied mathematics.

Another distinction between ethics and the physical sciences results from an inherent difference in the nature of the subject-matter. Science, it is said, is concerned with what *is;* it knows nothing of what *ought to be.* Ethics, on the other hand, is also concerned with what *is;* but finds its rule and aim in what seldom *is*, but always *ought to be.* The difference has been exaggerated to the extreme of supposing two worlds—the actually existing world belonging to science, and the ideal but non-existing world belonging to ethics. This is a travesty of the facts. Ethics has its feet firmly planted on the solid ground of actual facts. We may here safely borrow a phrase from Hegel. Being is not the known reality, but rather becoming. Nothing is absolutely fixed and permanent. All things change, pass over into something else. Living things grow and develop new forms, new powers, new activities. The plant, the animal, develops each according to its inner law. Human beings also change, develop, improve and deteriorate. Now the essence of the moral quality is man's ability to reflect upon himself, to judge beforehand what ought to be his mode of development, to perceive wherein he has failed or transgressed. Hence ethics deals with the real facts of the present as these actually are: though often in the way of self-condemnation; and sometimes more happily by indicating what the next immediate action ought to be, and making it just that. Nevertheless, in passing from physical science to ethics, we make a transition from one kind of subject-matter to another: albeit there is no absolute opposition. In physical science man has his ideals which he himself realises. Watt, watching a boiling kettle, conceives the idea of using steam as a motive power: and hence the steam-engine. Flying machines are ideal to-day: may be concrete realities in the twentieth century.

Ethics, then, though not altogether on the plane of the physical sciences, may be ranked as a science on its own merits. Indeed, the suggestion of distinguishing two classes

of science, the so-called "nature-sciences" and "mind-sciences," has already been made: and it appears to have its advantages. In this work we shall have again to refer to ethics in another connection. At present we need only draw attention to the fact that the meaning of the word "science" must change if the "mind-sciences" are added to the sciences of visible and tangible things. Hitherto the term "science" in its special meaning is derived from the physical sciences, with the inclusion of mathematics, and perhaps some slight reference to logic and ethics. Physical science, however, predominates, and gives the tone of meaning to the word "science" as generally used. Hence people come to think, as did Mr. Stephen, that whatever is science must be under the law of causation. And yet this is a manifest fallacy. For, not to speak of ethics, there is no causation in mathematics; there is no causation in logic.

CHAPTER VIII.

ON SCIENCE IN GENERAL.

ACCORDING to our definition, "science" means "the knowledge contained in the sciences". So understood, it remains an open question whether the sciences are coherent and form a system. Looked at from the inside, each science by itself is a system in which all the parts are mutually related, but looked at from the outside these several systems are by no means immediately and evidently connected in one general system. One science may presuppose another; as physics, for instance, cannot be studied scientifically apart from the laws of number and quantity with which mathematics deals. But the differentia of physics is the reality of its matter and force; and this reality keeps physics a science by itself, which cannot be deduced from, nor merged into, mathematics. Similarly, biology presupposes physics, but its special quality, life, makes it a science apart. We have then to seek for the meaning of science in general. Is there a common quality in all the sciences, which at once differentiates science from ordinary knowledge, and unites all the sciences together?

In some way the sciences are a unity; but what is the bond which unites them? It is not logical continuity. The sciences do not form a logical chain. We cannot pass from the final conclusions of mathematics to the primary assumptions of physics; nor from the last generalisations of physics to the data of botany and zoology. The bond is not a causal connection. When from the process of reasoning we turn our attention to the objects concerned, these we find to be, within each separate science, causally connected. Mathematics is an exception—here only the logical connection leads from one piece of knowledge to another. But in the concrete world of real things, with which the sciences of matter are occupied,

causation is the ruling principle. Yet we cannot, scientifically, pass from a mechanical cause to a chemical cause; nor from a chemical to a biological cause. Hypothesis can make the jump easily, but this is not science. The chemical affinities and repulsions of kinds of matter cannot be accounted for by mechanical strains and stresses of homogeneous matter. In biology, movements are regarded as produced by an active power residing in the cell and expressing its need of nutrition; whereas, in physics, motion is caused by the external action of mass upon mass, each mass being considered in itself inert. Scientific imagination lightly overleaps these gaps between the sciences, and postulates one unbroken chain of causation in one universal continuity of matter and motion: but imagination is not knowledge. Keeping strictly to actually existing knowledge, the sciences cannot be deduced from each other. They start, each from its own assumptions: they pursue, each its own onward way, covering a wider and ever wider area, until the same objects may be included in several sciences, each of which treats the object on its own special principles: but we do not find the objects of one science leading causally to those of another. On the one hand, each science has its own initial assumptions; on the other hand, no science has yet attained to a fixed end. Every one is incomplete. Sciences may run parallel to each other, and their paths may cross, but the independence of each science is not effaced.

We are obliged, then, to conclude that the unity of the sciences is not a *scientific* truth. If it is a truth, its grounds lie outside the sciences. For the prevalent opinion that science is a unity, a natural source is easily discernible: the unity of the knower. One mind in one world is an expression of the belief which underlies the whole fabric of knowledge, both ordinary and scientific. No science formally includes this belief among its primal assumptions; nevertheless the belief is there, and being there, it involves the belief that if science were completed it would be a unity. But the sciences as they are to-day do not constitute an actual recognisable unity. They are separate divisions of knowledge in reference to portions of a vast whole, the total magnitude of which is unknown; while it is known that large portions lie

outside the sciences. It is conceivable that these fragments of knowledge might have suggested a unity, of which they are fragments, and have indicated lines along which that unity should be sought; but it appears to be the fact that the belief in the unity is prior to, and independent of, the sciences; that it is, indeed, an outcome from those three fundamental certitudes upon which all our knowledge, ordinary, scientific and extra-scientific, alike rests.

The inadequacy of actual science to constitute a unity of knowledge corresponding to the real universe is exhibited also by a survey of the contents of the sciences. These contents are estimated very differently as seen from different points of view. Looked at from within, the sciences astound us by the magnitude, the marvel, the splendour, of their knowledge. But if we turn our gaze from the knowledge contained in the sciences to the wider area as yet unknown, this already acquired knowledge seems insignificant in comparison. Consider astronomy. This science, for its exactness and its extent, its wonderful predictions, its more wonderful discoveries, has been esteemed the queen of the sciences. And when we think of the stupendous change from geocentric to heliocentric astronomy, of the law of gravitation, of the discovery of the planets Uranus and Neptune, and of the sublime conception of the solar system as a whole, we may well pay homage to the splendid powers of human intellects which have achieved such knowledge as this! But now, on some clear night, in an open spot, look up and contemplate the visible heaven, which is the field of astronomical research; and ask—what is actually known respecting these multitudes of specks of light, which shine there in infinite space? The simplest and easiest kind of knowledge is number; but no astronomer has counted, or even conjectured, the number of the stars. Next to number comes arrangement or order; but astronomy has not the faintest conception of the order, or arrangement, of all these heavenly bodies—cannot, from knowledge, so much as assert that there is any order. With the exception of two or three, the distances of all the stars outside our solar system are wholly unknown. Not many years ago they were called the *fixed* stars; now it is known that they, or

some of them, move; but in what system, or whether there is a system, no one can tell. Suns they are supposed to be: but have they planets moving round them? If they are thus surrounded, are those planets worlds like our own? Are the planets of our own system, those nearest to our globe, Venus and Mars, inhabited or not?

As we thus meditate on the immensity of the universe, all the knowledge of this queen of the sciences, astronomy, as compared with the vastness of the field of astronomical ignorance, appears like the small pale light of one of those farthest dimmest stars compared with the infinite darkness in which it shines. And if we add to astronomical knowledge all the knowledge of all the other sciences, does the sum total make a much better show against the darkness of the infinite unknown? How can this infinitesimal fraction be deemed a *unity* of knowledge?

Yet again, the nature of science teaches the same lesson as its comparatively insignificant amount teaches. How much more may be necessary to make knowledge of the universe adequate to the reality of the universe is what we cannot even conjecture. But apart from this consideration, there are deficiencies in science which demonstrate its inadequacy to the reality. In any endeavour to understand the universe four necessary conceptions arise—*substance*, *force*, *law* and *reason*. Without *substance*, that is something real and permanent, as the material of which things are made, and the ground of change, we cannot conceive the world at all. A universe of ceaseless changes requires also some *force* to produce the changes. An orderly universe requires *law* to guide the force. If all these were ascertained, there still would be the demand for a *reason* why it all is as it is; in the absence of which reason, the universe must appear as irrational. Science does not go far towards satisfying these demands. It consists mainly in two kinds of connections between things: connections of similarity and connections of succession. By means of the first it classifies; by means of the second it predicts. Of these two sorts of science, the second is most highly esteemed in modern science. Scientific classification is knowledge, but its divisions and sub-divisions are not absolute.

The progress of science has set aside some, discovered links between others, and suggests continuity as the ultimate truth: everything connected with and arising out of everything else. The chief aspect of nature which lies open to our knowledge is its regularity in change. Consequently, at the present day, science is generally regarded as knowledge of "natural laws," that is, of regularly-recurring changes. Science knows nothing about the origin of things; nothing about the nature of the *force* or *forces* which cause things and their changes; nothing about the reasons why things are, and why they are thus and not otherwise. All these great concepts, substance, energy, and reason or meaning, fall outside the scope of the sciences. Science only gives descriptions of things by which we can classify them; and natural laws of cause and effect, by means of which we can to some extent foresee coming events. Now this is knowledge of much value for practical purposes; but evidently it falls far short of a perfect understanding of the reality.

In our inquiry into the nature of knowledge, it is useless to apply to science for information; because there is no science of knowledge. If science can afford us any help, it is as being knowledge. Are there any qualities or characteristics of science which it behoves us to note? Three qualities demand consideration: science is (1) objective; (2) is particular; (3) is abstract.

(1) Common knowledge is chiefly objective, but its subjective side is seldom altogether out of sight. In practical life, self-interest predominates, and next to that, social interests come in. Therefore, although ordinary knowledge of things takes an objective form and is expressed in objective language, it is never very far away from our personal relation to the things. In science, on the other hand, a deliberate effort is made to know objects as they are in themselves apart from their relation to the knowing mind. The thinker engaged in scientific study assumes the position and enjoins upon himself the spirit of an unconcerned spectator and impartial judge, whose sole business it is to see what is going on before his eyes, and to judge the facts as they are in themselves. He is fortified in this mental attitude by a genuine belief

that the objects are in some way outside of, and independent of, his will, his activity, his knowledge. The matter and forces of the external world existed before man's entrance upon the scene; they obey fixed laws which are inherent in their own nature, and in no degree alterable by human thought or will. Dominated by this sense of the utter impotence of man to create, or to change the nature of, the things and the forces which are the objects of his contemplation, the scient undertakes the task of learning from them what they are, and what are the laws of their changes; leaving the practical application of the knowledge so acquired for a supplementary after-thought. Pure knowledge of things as they are is the immediate aim of science. Thus, while ordinary knowledge, so far as it is objective, follows therein an unreflective impulse, science is deliberately and of set purpose objective, in accordance with its judgment as to the nature of things.

(2) Science is particular, departmental, fragmentary. This contradicts an assertion frequently made that science is universal. The universality claimed for science is, however, only internal; it only extends to the limits of the particular science. In botany, it is not the individual plant or leaf which science makes its object; that is merely regarded as a specimen of the class to which it belongs. So each science is universal in its form; all triangles, all stars, all plants, all men, are the objects of their respective sciences. Peculiarities which distinguish one individual thing from another are disregarded by science: for these minute diversities are infinite in number, and not reducible to general laws. The business of science is to classify; and a class is "a universal": it includes all of that kind. But this internal universality of each science does not alter the fact that every science is confined to a particular subject-matter, is a mere department of knowledge, dealing with a fragment of the great whole of things. Strictly speaking, it is incorrect to say that science is universal; it is, in fact, *general* knowledge: it deals with genera, classes and species. On the one hand, it neglects the peculiarity which marks the individual member of a class; on the other, it does not reach to the whole reality: to all things considered as a totality, or a system.

(3) Science is abstract. This is not a different quality from the former two, but the expression of both by a single word. The objective character of science is its abstraction of objects from the concrete reality in which they exist in relation to the subject: the particularity of science is the abstraction of one portion or aspect of the given reality from all the rest, with which the portion or aspect is really indissolubly connected. Thus in science we have knowledge at two removes from the reality. In reality we are all of us in a world of which we are parts; we are *not* outside spectators, disinterested judges; we are actors in the drama; and we know the whole, both self and the other performers, and the scenery and the stage itself, only by means of bodily sensations and mental activities—which sensations and activities are subjective in their nature. In science, the relations of one part of the action to another, and of all to the self, are ignored. Astronomy is knowledge of the heavenly bodies, considered as masses of homogeneous matter moving in space; it ignores the chemical and vital phenomena of matter. That abstraction, however, seems comparatively unimportant by the side of the immense departure from the actual facts, which the ignoring of the living, feeling self, and the substitution in its place of a wholly fictitious abstract spectator involves.

CHAPTER IX.

THE VALIDITY AND THE CRITERIA OF KNOWLEDGE.

AT this stage let us pause and consider the position. Starting from the fact that we have some certain knowledge, we contemplated the consciousness in which knowledge arises, and distinguished between knowledge and the data of consciousness to which it refers. This led us to the view that knowledge is an interpretation of consciousness, and to the provisional definition that knowledge is an agreement with or correspondence to reality. Feeling the need of some definite standing ground or basis upon and from which to carry on our inquiry, we observed the three fundamental certitudes, with which we and all men actually begin our personal knowledge. Resuming, then, the investigation of knowledge, we concluded that it is homogeneous. Nevertheless, one cannot overlook the fact that in our lifetime science has been commonly regarded as in some way different from common knowledge. Searching for the cause or ground of this opinion, we found that science is not different in essence from ordinary knowledge, but rather its continuation, increase and improvement; by greater precision of observation, accompanied by planned experiments, carried out with exact measurements. Still, science and ordinary knowledge are essentially one in kind.

The examination of science showed us that scientific knowledge is abstract, objective, departmental. Here, then, we are involved in a dilemma. By our provisional definition, knowledge is an agreement or correspondence of thinking with reality. Now reality is concrete, not abstract; it is not objective only, but includes both the subject and the objects; it is not departmental, but the whole which includes all departments. Each one of the three characteristics of science

contradicts the definition of knowledge! In regard to the objectivity and the departmentalism, there is a loophole for escape. We may say, and say justly, that the sciences do not pretend to be universal knowledge, that their "reality" is not the totality of the universe, but each science professes to know only some real things: as stars, minerals, plants, etc. The objectivity, again, it may be said, is a relative objectivity: these things are objects to us; and it is natural that we should know them as they appear to us. In this way, by limiting science to parts and aspects of reality, we defend it against the charge of directly conflicting with that which it claims to represent and to interpret. But abstraction is a characteristic of science which cannot in any way be reconciled with our definition of knowledge. Everything real is concrete. Nothing abstract really exists. Numbers, for instance, and mathematical points and lines exist only in thinking minds. Abstractions themselves, they have a hold upon reality only in the concrete minds which think them. We find abstractions convenient and even necessary for *thinking*, but nobody seriously believes that they exist except as parts or qualities of concrete things. Science, then, being abstract, and reality being concrete, how can the two agree or correspond? Either science is not knowledge, or knowledge is something else than agreement with reality. Or is it, perhaps, that we have been all this time using the word "agreement," or "conformity," or "correspondence," without having any definite meaning for it? Whatever has been the occasion of our falling into this dilemma, it is plain that we are at the present moment caught in it, and efforts must be made to extricate ourselves. Our provisional definition of knowledge has proved to be unsatisfactory. It will not fit the facts: it has led us into self-contradiction. And the question may arise—does not this discovery cast some suspicion upon the knowledge itself which has been defined in this way? For we cannot confine the "abstractness" to science alone. Science and common knowledge being homogeneous, the two must have the same marks: or, at least, *some* common knowledge, that common knowledge of which science is the direct continuation and improvement, must be, like science, abstract, objective and departmental.

We began with the fact that we have some certain knowledge, and we cannot afford to allow a shadow of suspicion to rest upon this, our fundamental fact. Before we proceed to the further investigation which our present unsatisfactory position necessitates, it will be advisable, at this point, to consider the validity and the criteria of knowledge.

What do we mean by the *validity* of knowledge? Validity is strength, soundness, genuineness: it means that knowledge holds good, is true. So, upon examination, it is evident that the term *validity* adds nothing to knowledge. All knowledge is valid; that is, it is true, it holds good, it is certain. Validity is just truth, certainty, and not a new and different quality. The use of the term simply expresses the fact that certain knowledge will not fail us: it can be relied upon. The examination of knowledge, so far as we have gone, has not brought to light any ground or proof by which we can assure ourselves that our knowledge is true or valid; but, on the other hand, it has not made manifest the need of any such proof. The fact that we have some certain knowledge remains undisturbed. Certain knowledge is valid knowledge; knowledge itself is certain, is valid. When we are not certain, we do not know. As this is the essential and permanent character of knowledge, our failure to define knowledge does not touch its certainty. Test this for yourself in the case of any certain knowledge which you have. Two and two are four; cows differ from cabbages; human nature shrinks from pain; drunkenness is a vice—all these items of knowledge remain as certain, as valid, as ever, in spite of our ill-success in the definition of knowledge. Our investigation of knowledge does not injure knowledge. Let no fear of that result distress our minds. The investigation may impress us with a sense of the incompleteness of our knowledge, and of its inadequacy to stand for the infinite reality; it may in the end modify our view of knowledge, and possibly may lead to a new definition; but the knowledge itself will remain as true and as certain as ever it was.

By criteria of knowledge are meant some marks or qualities which, at various times and by different persons, have been used as tests, in order to determine what is true and certain

knowledge. These are (1) its clearness and distinctness; (2) its necessity or compulsion; (3) its congruity or internal harmony; (4) its verification, or confirmation by facts; (5) the universal assent which it commands. Not all these marks are to be looked for in every single piece of knowledge; nor have they all been equally valued by everybody. The first and second were the tests relied upon when mathematical science was the type of certain knowledge. The third and fourth have been more resorted to in our age, when physical science has superseded mathematics in general esteem. Universal assent will always maintain its authority. No doubt these criteria have been and will be useful when properly applied: but they may be misapplied. In mathematics, for instance, clearness and distinctness are qualities which we may demand. And in the logical demonstrations of mathematics, nothing short of a compulsory conclusion is satisfactory. But for clearness and distinctness in our definitions, we want clear and distinct objects. An object perfectly simple in itself and plainly separable from all other objects can be clearly and distinctly known. But when objects are highly complex in themselves, and united in many ways to other objects, the demand that knowledge of these shall be clear and distinct may have to be qualified. The further we go from mathematics through physics to physiology and psychology, the more difficult it is to get clearness and distinctness. Hence the modern preference for the tests of congruity and verification. Universal assent is a confirmation of knowledge, which in the nature of the case must always be desired, but, practically, this test is often difficult of application. For in order to apply it, we must first make sure that all persons who are admitted as judges are normally developed, and then also that they all have the same facts before their minds. This can rarely be attained. We are all animals; and in sensuous things we mostly judge alike: but we differ widely in mental and moral development. In questions of art, politics, morals and religion, the agreement of a few, or even the solitary knowledge of one man, may outweigh the consensus of the world.

These so-called canons, criteria, or tests of knowledge,

do not go deep enough for our purpose. They all are, in one way or another, dependent upon the three fundamental certitudes, and are applications of these to particular cases. In the first criterion, confidence is placed in mental intuition; in the second, in mental feeling. This is really placing confidence in the self. Knowledge, in fact, is self-assertion; it is "I know". The second and third criteria refer to the external world, to the facts observed and interpreted. They apply the maxim "nature never deceives". The nature of things is trustworthy: we may, by our haste, or carelessness, or the imperfection of our data, come to a wrong interpretation: but when all our interpretations are supported by all the facts, our knowledge is secure. Universal assent obviously rests on the certitude of other selves. Now the question we propose is just this—*why* should we repose this confidence in our own selves? Surely we know ourselves only too prone to error. *Why* should we rest in the general agreement of mankind? It is obvious that as a rule the majority of men are always in the wrong in some of their judgments. For human progress always begins with the few, the advanced guard, who march on and survey the ground, and discover the route, while the host abides in its camp. *Why* should we be so sure of this "nature," these "facts," this "real world"? It is just this reality which we need to know, and in regard to which we feel the immensity of our ignorance. The criteria of knowledge have chiefly in view the distinguishing of truth from error, of real knowledge from spurious or false knowledge. That is an important work; but it is only a secondary task. The first and most urgent business is to ascertain the nature and grounds of our true knowledge. When this task is accomplished, the separation between the true and the false may be easier.

At present we do not seem to have made much progress towards our goal. We started with the provisional definition—knowledge is mental judgment in accordance with the reality. Hitherto we have been considering knowledge. There are two other terms in our definition. We may now proceed either to contemplate the "reality," which would be entering upon the line of thought called philosophy; or, we may

endeavour to clear up this difficulty which lies in the term "agreement" or "correspondence," that is in the relation of the thinking mind to the reality: this would lead us to a review of psychology, the so-called science of mind. In the case of the mathematical, physical, and biological sciences, we held ourselves exempt from any special criticism: because we could, with full confidence, accept all the certain results of these sciences; namely, those which are guaranteed by the unanimous support of all the teachers of the sciences. Psychology, however, is in a different relation to us. As the science of mind, we should have expected to find this inquiry of ours anticipated therein, and brought to a conclusion long ago. This, however, is not the case: and it seems, therefore, needful for us to look more closely at psychology than we did at the other sciences; and to ascertain what it is that psychology teaches, and what help it can afford us in our attempt to deal with the problem of knowledge.

PART IV.—PSYCHOLOGY.

CHAPTER I.

WHAT IS PSYCHOLOGY?

IS psychology a science? We must try it by the definition already laid down. If psychology is a science, it must have a special subject-matter, and so be a definite department of knowledge. The older psychologies satisfied this requirement. Psychology was the science of the soul or mind, as anatomy was the science of the body. Before Kant there was a "rational psychology," the fundamental principles of which were "(1) the soul is *substance;* (2) in its quality, *simple;* (3) in the different times in which it exists, numerically identical, *i.e.*, a unity, not a plurality; (4) it is in relations to possible objects in space".[1] From this definition of the soul, its immateriality, incorruptibility, personality and immortality were deduced. Kant argued against the legitimacy of this reasoning. Since his time "rational" psychology has become obsolete, though Herbart still clave to it.[2] Later, psychology was a science of experience, with the soul for its subject-matter. This, indeed, seems perfectly natural. After mathematics, the science of magnitudes and number, we have the sciences of unconscious and inert matter; then the science of life; succeeding to this the science of sentient life; the intelligent or rational life seems the next step in advance. Psychology would seem to be as fitting a name for a group of natural sciences as biology is. But as a matter of fact, modern psychology carefully guards itself against the imputation of taking "the soul" as its subject-matter, and proposes instead one or other of the four following:—

[1] *Transcendental Dialectic*, Book ii., chap. i.
[2] *Lehrbuch zur Psychologie*, Dritter Theil, Erster Capitel.

(1) Mental phenomena ;
(2) The same, in conjunction with concomitant physiological phenomena ;
(3) The relation between the two sets of phenomena ;
(4) The whole human experience as immediately experienced.

This variety exhibits not only the difficulty of finding the proper subject-matter if "the mind" or "soul" is not accepted as such subject-matter, but also the difficulty of carrying out the intention to set "mind" aside. For the "mental phenomena" of the first three proposals are phenomena of *mind*. Mind, then, is somehow known, sufficiently at least for its phenomena to be distinguished from other phenomena not mental ; which, of course, are the phenomena of matter, inorganic and organic. These psychologies, in fact, are based upon an unacknowledged assumption of the three fundamental certitudes. They presuppose that we know our own minds and the material universe well enough to distinguish mind from matter. So long as we abide on the firm standing ground of the three certitudes, this presupposition is justified. But the psychologist who refuses to acknowledge *mind* as his given subject-matter has abandoned this standing ground, and has no right to make the presupposition. Mind, as a "substance," he says, is not objectively known, and also, although he does not say it, matter as a "substance" is equally unknown. Whence it follows that the psychologist cannot discover a radical and ultimate distinction between mental and material phenomena. In striking contrast to the sciences which have, as their subject-matter, real things, and also to mathematics, which has definite ideal things, psychology, in the third proposal, sets before itself an unknown *relation* as its subject-matter. In the face of these unsatisfactory attempts to mark off a field for psychology, it is not surprising that the proposal to take the whole area of human conscious experience with all its contents as the true subject-matter of the science has been made. In this psychology the distinction between mind and matter is regarded as fundamentally unreal: all so-called material things are in reality states of mind. So

far, then, as its subject-matter is concerned, psychology cannot be reckoned among the sciences. If it is a science, it is a science so unlike to the physical sciences that it must be put into a new class of sciences—a class so essentially different that to retain the name *science* for it would be to destroy the special meaning of the name which we have derived from the established sciences.

We have now to consider the claim of psychology to be an *objective* science. According to our survey in the preceding part, it is a characteristic mark of *science* that it is objective. This objectivity the scient does not deliberately adopt when he enters upon a scientific investigation, but brings with him as a habit of mind formed in his pre-scientific experience. To the astronomer, sun, moon, planets, stars, nebulæ, are real objects, which he regards as existing externally in space and independent of his personality. He can observe them, but he did not produce them, cannot change them. They are unaffected by his will, and are what they are, whether he observes them or not. This externality and independence are what he means by their objectivity. He is but an observer and an interpreter of natural things and movements, upon the reality and constancy of which he can rely with perfect confidence. This description of the objectivity of astronomy applies also to all the other physical sciences.

We cannot, however, fail to notice that when the scient passes beyond the limits of the actual sciences, and begins to speculate upon things in general and the universe as a whole, the objective attitude of mind stiffens and becomes dogmatic. The observer now regards himself as the abstract spectator who contemplates a vast panorama from which he definitely dissociates himself. In the first instance this abstract attitude is assumed quite innocently. The scient means only to separate his scientific judgments from his individual personality. He takes himself as perceiving and knowing, leaving out of sight the fact that he also feels and wills, because his preference and volition do not alter the external facts. Moreover "the abstract spectator" is not a private individual, but the ideal man who stands for the whole company of scientific observers. Thus he means

to eliminate possible errors of individual negligence and prejudice. We must own, then, that in this objectivity of science there is no intention to assert anything about the subject, the whole purpose is to maintain the pure objectivity, and thus the perfect certainty, of the knowledge contained in the science. It is knowledge of facts, of objects as they are, unencumbered by any questions respecting the subject who perceives the facts.

But when, as in philosophy, subject and object are considered together as a pair of opposites, this opposition is a serious difficulty. Me and not-Me are sharply severed. The object is that which is *not* the subject; the subject is that which is *not* the object; and there is no known bond of connection between the two. Object has been defined as that which is altogether outside of, and essentially independent of, the subject. Accordingly there is no *relation* between the subject and the object; for absolute externality and independence is the negation of relation. Manifestly this is an insuperable obstacle in the way of philosophy; and it is not only a trouble of philosophy, it also stultifies the scientific concept of knowledge. Hitherto we have accepted the view that knowledge is thinking in agreement with the facts, the objects or reality. But now the subject is declared altogether out of relation to the objects; therefore cannot perceive them, cannot assert anything concerning them. The question whether knowledge is true ceases to be rational, for neither perception nor knowledge can exist. How philosophy gets over this deadlock we need not consider here.

Let us now consider the position of the psychologist. He wishes to make his study of psychology an objective science. Can he do this? Plainly, so long as he maintains the meaning of objectivity which has been accepted in the case of astronomy and the other sciences, he cannot. That meaning is "apart from, independent of, the subject". The psychologist has to observe, to describe, to analyse, and if possible to explain *the subject.* Whether the subject is a mind or soul, or "the stream of consciousness," or mental phenomena, however it be provisionally named, it is all subject and subjective. Therefore psychology, be it what it may, is not an *objective* science.

How, then, can we account for the fact that there are so many psychologies which profess to be objective science? No doubt the splendid success of the physical sciences has led to a general belief that *science* is the model to which all knowledge must conform if it would deserve universal confidence. But also, it seems to me, the unnoticed ambiguity of the word "object" has helped to produce an unfortunate mistake. Object means, (1) for science, a real external thing, and (2) for the mind, something about which we think. In reality these two meanings are combined. The scientific object, if it is described as it really is, and not abstractly, is "something which *we perceive*, *think about*, and *judge* to be of such and such qualities". Hence, it comes to pass that, in common usage, there are two meanings of object: (1) something which *is;* (2) something about which we *think.* The first meaning is retained in objective science; the second dropped out of sight; and thus arises the notion of the object as existing independently of the thinker. In this way the two halves of the meaning of object are separated from each other, and become two contradictory propositions. The first is, object is independent of subject; the second, object is dependent on subject. Psychology holds by the second, and nevertheless aspires to the objectivity of science which is based on the contradictory conception!

So long as by "objects" we mean only the facts about which we think, psychology may properly be called objective. But the use of the word objective, *in the sense in which it is used in the physical sciences*, is evidently inadmissible. A man's own perceptions, feelings, desires, etc., are undeniably subjective: cannot be objective in the scientific sense. Even to call them "objects of thought," though admissible, is dangerous. It is an easy transition to call them "objective thoughts"; and from thence one may perhaps fall into the illusion that these "objective thoughts" have, like the objects of the physical sciences, an existence in their own right, apart from the subject who perceives, feels and thinks. The psychologist, in his ambition to carry on his work in the tracks made by the scients, may persuade himself that he actually can be an "abstract spectator" of the stream of

consciousness, the succession of sensations, perceptions, judgments, volitions and activities, which is the subject-matter he is studying. It is safer to eschew this phrase "objective thoughts". All thoughts are subjective: they can be the subject-matter of our thinking. Subject-matter is an ungainly compound: but awkward phraseology is better than running the risk of ambiguity. Psychology is necessarily subjective, and even when it is extended to the observation of other selves, it does not lose this character; for they too are subjects: it is only through and by means of our own subjective experience that we can apprehend their existence. It seems, then, to be an inevitable conclusion that psychology is not an *objective* science.

What, then, is psychology? Descriptions and analyses of mental phenomena, their classification and attempts to trace causal connections among them, might be called *subjective* science if it were possible to purge the word *science* of its objective character. Physiological-psychology, which studies the relations of mental function to the brain and nerves, is partly an objective science; but its objective part belongs to physiology, and the subjective part, the connection between mind and brain, can in no way be made objective. Experimental psychology is an attempt to gain some definite knowledge of mental phenomena, and of the connection between mental and physiological phenomena by means of planned observations under arranged conditions. Its methods, at least, are scientific. Child-psychology is an equally valid way of seeking information as to the development of mind. The amount of patient and painstaking mental labour which has been devoted to all these various departments during the half century now closing deserves grateful recognition. As to the particular name by which all this honest and earnest work shall be called, that is of small moment. At present it seems as though psychology was being prosecuted from a sense of need, rather than under the inspiration of one guiding idea. We want to know *something*—but what it is that we want to know, no one tells us exactly. Is it *mind?* Is it the *connection* between mind and matter? Is it the centre and the law of *everything?* As the facts stand at present,

psychology seems to exhibit the state of disquiet and mental confusion which belongs to the breaking away from an old and long-established conviction or creed, while as yet no new conviction has arisen which supplies its place. Science, as we have seen, historically arose out of common knowledge, and like common knowledge, rests upon the three fundamental certitudes. No science disturbs the certainty of the self, of other selves, of a world of real things. In psychology we have reached a point at which this earlier scientific certainty is broken up. Men begin to ask—what is the self? What is the objective reality? What is the *whole?* These questions were inevitable; and when once they have arisen, there is no way of escape, except an honest review of the whole range of consciousness and knowledge, a thorough criticism of previous judgments respecting both, and, if possible, a regaining of a settled conviction which shall give satisfaction and peace to the inquiring intellect. To me its seems that psychology, taken as a whole, is a stage of this criticism and attempted reconstruction. To give it the name, and measure it by the standard of the sciences, seems to be a mistake. The value of psychology depends upon the amount of true knowledge which it contains. It gains nothing by being called science. On the other hand, the term science loses its distinctive signification if we apply it to a branch of inquiry which has no definite and generally accepted subject-matter, which is not objective, which cannot be treated by the method of abstraction. Moreover, this resolve by hook or by crook to make psychology an objective science, fosters the notion that objective science is the universal and final form of reflective knowledge—a notion which our survey of the sciences has not tended to support. I would prefer to call psychology a study rather than a science, and to account it a preliminary study undertaken in preparation for philosophy.

We pass now to the second question—what certain knowledge does psychology contain? The answer is, "very much," or "next to none," according as we ascribe to psychology as its own all that knowledge which is its subject-matter, or only that knowledge which is the fruit of psychological study. If we credit psychology with all the knowledge which it

finds ready to hand at the outset of its work, then the whole mass of common knowledge of mental phenomena is psychological; but if we take the view that nothing can be regarded as belonging to psychology as its own except new knowledge which has arisen in consequence of the study, at first sight it seems difficult to name any single item of certain psychological knowledge. This seems an unkind, almost a cruel, judgment upon a study to which so much labour has been devoted, and in furtherance of which so many books have been written; but if we have rightly perceived the true character and office of psychology, this impression disappears. The psychologist no doubt began his task supposing that he had a definite subject-matter, namely, mind and its functions, put into his hands; and that he had only to study it faithfully, as an astronomer studies the stars, and a chemist studies material substances. But he soon found out that his case was different: that he was raising questions about the nature and even the real existence of the mind itself. Instead of dealing with his subject-matter as an indubitable reality, he was becoming a critic and a sceptic. And the worst of it is that he has admitted into his mind doubts about one of the fundamental certitudes upon which hitherto all knowledge had been based. In this intolerable position the ambition to discover new knowledge seems altogether out of place. If only the man can dispel his own doubts, regain the certainty of the knowledge which has been challenged, show the real grounds of the certitudes without which no knowledge is possible, surely this result will be reward enough for all his toil. Or if he does not attain this happy issue, if the fundamental certitudes once called in question can never be re-established, then his researches must be directed towards a re-formation of the whole mental attitude, a re-statement of the conditions of consciousness and knowledge. He has, in fact, stumbled into a quicksand of unbelief which threatens to swallow him up; and his urgent need is to extricate himself, and to stand once more upon solid ground. He is engaged in a struggle for his intellectual life; and it is out of place to think about acquiring new knowledge when the question is whether there is, or can be, any knowledge at all.

So far as the descriptive and analytical parts of psychology are concerned, no one expects to find here any real increase of knowledge: if the description and the analysis are accurate, they fulfil their purpose. In what is called physiological psychology the question is, what share of the discoveries belongs to psychology proper? The dissecting out of the brain and the nerves, the microscopical examination of their cells and fibres, the exposition of the working of this delicate mechanism, belong to physiology. And if from the ascertained facts of the structure and functions of the nervous system valid inferences can be drawn as to the nature and operations of mind or consciousness, these additions to our knowledge are due to physiological research. Psychology proper is confined to the mental phenomena. The relation of or connection between the two series of phenomena, the cerebral and the mental, is the question in which our interest centres; but up to the present time it remains unanswered. Does physical matter and energy somehow become, or give birth to, mind or consciousness? Or does mind or consciousness in some unknown way become, or produce, physical matter and energy? Or are these two kinds of being wholly independent each of the other? And if so, how are we to account for the apparent interaction of the two? There are no replies to these root-questions, except such as are, at best, theory or hypothesis, not knowledge.

Experimental psychology records a large number of interesting facts; for instance—"A careful examination by means of tuning forks, vibrating rods, etc., has shown that the lower limit of tone perception lies at about 16, the upper at about 50,000 vibrations in one second, but that individual differences may largely alter these values—especially the latter".[1] "A practised ear can distinguish some 11,000 elementary qualities of tone"; but "only about 553 discriminable qualities of noise". In contrast to this astonishing range and variety of audible perceptions, we are told, in respect to distinct qualities of taste, "there is general agreement at the present time that four are all that can be claimed, *sweet*,

[1] Kulpe's *Psychology*, p. 105.

bitter, *acid* and *salt*".[1] "There are, however, some psychologists who would add *alkaline* and *metallic* to the list."[2] "We may put the number of discriminable colours at about 150."[3] Out of a laborious accumulation of details of this kind, some valuable generalisation may one day come to light. Meantime the only natural law which experimental psychology claims to have discovered is that which is known as Weber's law. As to this law, there is some difference among psychologists; and I hardly know whether it is worth while to try to make it intelligible to readers who are not psychologists. We all are aware that there are differences among our sensations; that one light is brighter than another; one pain intenser than another. Also, there are differences in the external objects or events which we regard as causes of the sensations. Two lighted candles give more light than one. A heavy slash with a whip causes more pain than a gentle touch. Experimental psychology busying itself with attempts to measure man's power of discriminating increases of sensation discovered Weber's law; which Wundt illustrates thus—"If we must increase the strength of a sound 1 by $\frac{1}{3}$ in order that the sound-sensation may be just noticeably greater, then we must increase the strength of a sound 2 by $\frac{2}{3}$, 3 by $\frac{3}{3}$, and so on, in order to reach the threshold of difference".[4] This law of increase by constant fractional ratio holds good not for sensations of sound alone, but for other sensations also: though the fraction varies in the different sensations. Fechner expressed the law thus—"The strength of the stimulus must increase in geometrical progression in order that the sensation may increase in arithmetical progression". This version of the law is disputed, and Kulpe denies it.[5] Weber's law is not easily grasped by those who have not made a study of experimental psychology. I have referred to it here because it is the only definite law which this psychology professes to have discovered.

I think, then, we do no injustice to psychology by concluding that its real worth is not to be estimated by the

[1] Kulpe's *Psychology*, pp. 106-7. [2] *Ibid.*, p. 97. [3] *Ibid.*, p. 127.
[4] Wundt, *Grundriss der Psychologie*, p. 302.
[5] Kulpe's *Psychology*, p. 167.

additions which it makes to human knowledge. As a study, psychology is indispensable—not to the philosopher only, but to every one who presumes on grounds of reason to have any definite convictions on ultimate truth. But every thinking man is more or less a psychologist; and whether prolonged study of psychological books will greatly increase his ability to deal with psychological problems as they arise may be a point upon which different opinions will be held. If, as I have been so bold as to suggest, modern psychology represents a state of fermentation in the human mind which is working powerfully, but without clear vision either of the causes which have led to this fermentation or of the ends towards which it is tending, it is not impossible that some of our would-be teachers in this department are not safe guides. At any rate in our inquiry into the nature and grounds of knowledge, we dare not take anything from psychology on trust. Whatever it offers for our acceptance we must probe to the utmost. That is in effect saying we must psychologise for ourselves so far as it is necessary: and this is an answer to our third question—what help can psychology give us in our inquiry? Inasmuch as *knowing* is one of the chief functions of the human mind, we might have expected to find the problem of knowledge fully discussed in every possible light in psychological text-books. In fact our special inquiry is hardly so much as mentioned. If it is mentioned, the psychologist generally hands it over to the philosopher as a subject-matter belonging to his province. This being done, the distinction between psychology and philosophy seems hardly worth maintaining.

CHAPTER II.

PSYCHOLOGICAL ANALYSIS.

IF it be indeed true that to regard psychology as an objective science is an error, then it is to be feared that those who have worked at psychology under the influence of this error have not escaped its evil consequences. Working under a false impression, they naturally try to make psychology what they think it ought to be. They have a bias towards objectivity, and are in danger of imagining that they perceive it where it does not exist. If I may borrow a phrase from a psychologist of deservedly high reputation, I would venture to call this imagination of *objects*, where there are none "*the* psychologist's fallacy". Whether I am right or wrong in this changed application of the phrase, the reader will agree that at any rate such an error, if it occur, will vitiate the psychology infected by it. In the analysis of the data of consciousness, which is the first business of the psychological student, we must carefully guard ourselves against falling into this fundamental error.

The student of mind, or mental phenomena, has first of all to re-survey the whole field of consciousness and knowledge in its utmost length and breadth in order to apprehend as clearly as possible the subject-matter with which he has to do. Is the subject-matter, as Wundt teaches, the totality of experience—everything perceived, thought, imagined, both material and spiritual, and all this considered in every possible light? Or is it a part, or if not a part, a distinguishable aspect, of the whole? This process of reconsidering the whole data may be called the psychological criticism of consciousness, in contra-distinction to the earlier and less severe criticism already performed by common-sense.

But here we must avoid an extreme view. It is true

that the entrance upon psychology and philosophy is a fitting moment for a fresh criticism of the data: but we must not suppose that the earlier criticism of common-sense and the later criticism by the reflective intellect are two distinct processes, each gone through once for all. The human mind, both in the individual and in the race, is always criticising, and always resting in the results of criticism; and neither of these states is at any time complete and altogether exclusive of the other. We have our wide-awake moments when we sharply criticise old familiar judgments, and freely form new ones. At other times the mind is sleepily self-satisfied in its prejudices; not even alive to the fact that criticism is possible. Our mental life is a mixture and an alternation of criticism and dogmatism in ever varying proportions. I suppose that there are few or none who really believe they have nothing more to learn; and none who really hold that they have *no* certain knowledge, that *all* their judgments lie open to future correction. Yet this state of things, or rather of minds, does not shut out the possibility of special periods when a man, or a generation of men, suddenly wakes up and feels the need of a thorough over-hauling of the whole stock of fixed beliefs. After a long spell of undisturbed dogmatism the hour and the man arrive, when the alarm-bell of criticism peals out, and every one is summoned to show cause why he holds those long unchallenged opinions. In comparatively recent times we can descry instances which remind us of Comte's three stages of mental development. The religious side of human nature, having fallen under the yoke of sacerdotalism, sunk for ages into a dogmatic lethargy, until one Tetzel stung Martin Luther into mental wakefulness, and the criticism of religious dogma was begun. After the religious the intellectual nature had its reign, until Hume's keen-witted scepticism aroused Kant from dogmatic slumber, as he himself has told us. After the dogmatism of religion, the dogmatism of metaphysics, and then the dogmatism of science. This dogmatism now in its turn is challenged. Not that any of these was or is wholly false. Far from it; I suppose that each in its time was the best that the thinkers of that time could achieve; and none of the three had at any time ex-

clusive possession of human minds. Religion, metaphysics, material science, all of these can stand criticism, and in the end are purified by it. Nor do I wish to attach too much importance to my personal opinion as to the character and needs of our own time. My object is to guard against both a narrow and an exaggerated view of our present task. To me it seems that we are living in an age of scientific dogmatism; that our task is to criticise knowledge and science. Perhaps it would be impossible to over-rate the importance of an act by which we to a large extent determine the character of our mental judgment of the universe. Yet others have performed like tasks before us; and we too shall pass, and others will again essay further criticism after us. Who shall dare to regard his performance as the "once for all" which is to abide unchallenged by all posterity?

Before we begin to psychologise on our own account, a glance at these past and present dogmatisms may give us a hint. We notice that underlying them all is the philosophic dualism of Subject and Object. In the religious and the intellectual eras the Subject was made supreme. The spiritual and the intellectual predominated, the material was subordinate. In the era of science the material is regarded as the real: the Object is made the standard of certainty, and the Subject is made subordinate. What then remains possible for us? Are we also enclosed as in a vice by an inevitable dualism? Is the natural course of mental development a swinging of the pendulum from one extreme to the other? We may not anticipate the results of the re-survey of the data which we have to make. It may be that knowledge of the whole of the universe is not possible for man. We who are engaged in investigating the nature of knowledge are, by our selected task, precluded from even making a conjecture as to its limits. But we may take the hint from our predecessors to examine carefully our data, in order that we may miss none of its contents.

What then is the field which we must survey? It is the whole universe so far as it comes within the range of our thought; it is *the whole:* not two separate entities, or two classes of entities, called mind and matter, or subject and

object, but the whole which contains these, and possibly something more than, something different from, these. This field is not the same as the data of consciousness which was surveyed in the first part of our work. Then we were trying to get some provisional conception of *knowledge*, and to that end made an effort to examine consciousness as the *prius* of knowledge. Now we survey the whole field of consciousness and knowledge; nor may we omit art, poetry, imagination, since these indirectly represent something real. In our former research we came upon the three fundamental certitudes as actually forming the basis of our knowledge. Now the challenge of scepticism has compelled us to reconsider these certitudes. We do not therefore discard them. We do not make believe that we are ignorant of them. As a matter of fact, unless we practically accept the certitudes, we cannot make the survey we want to make. But for the moment we do not speak of them. Just now we are to look at the universe as it is thinkable by us in our present consciousness and knowledge—never mind how we came by these. We contemplate the universe—what do we perceive? Indubitably we perceive something which we call the subject, mind, or consciousness; and also we perceive many things which we call objects, and some of these material objects, by us regarded as unconscious. But is this all? Is this a full description of the facts before us? No; we discern in the totality of things a class we call *human beings.* Each of us *is* a human being. What is this *human being?* Is he a mind, a soul, a spirit, a consciousness? Not so; he is *a human being*, conscious, and also corporeal. We cannot perceive, we cannot imagine him as pure spirit or pure consciousness. Whether there are pure spirits or consciousnesses in the universe we do not know; but we do know that man is not pure spirit, but of "soul and body consisting". At the same time we know man as a unity, not as a compound. If he is a compound, we do not know him as such. We do not know the mind apart from the body; the body without the soul is a corpse. Does not this give us the right to modify the former dualistic conception of the totality of things? It is possible now to think of it as a triad—not mind and matter, but mind, body and matter. The body, the material organism

with which consciousness is somehow connected, offers itself as a middle term between the two opposite poles, mind and matter. Again this middle term brings together in a known reality the subject and the object. For whatever it is that thinks, call it consciousness or what you will, is given connected with this visible and tangible organism. How to combine mind and matter in a unity is a problem insoluble by human knowledge: but here we have the combination actually existing in a living example. Mind and matter are both abstract conceptions. Man is the unity which is both and conceives both.

In this re-survey of the thinkable totality of things, it is well to linger contemplatively before we make the first selection. Casting our glance over the whole, it always starts from the self as the centre; and our former division of the whole into self, other selves, and the world of objects, is one which maintains itself in the face of repeated scrutiny. But now, taking the subject or consciousness as the centre and starting point (for we have consented to the momentary ignoring of the self as a mind or soul), we perceive that this consciousness is enclosed within two circles or spheres: a small one, the body, which has visible limits; and a larger one, the environment, the external world, which has no known limits. Everything within the two spheres is somehow related to us; if only in so far that it is perceptible to or thinkable by us. The question then arises—in this totality in which we ourselves are and live, is there any part which we may justifiably select as subject-matter for special study? I think there is neither difficulty nor doubt about the answer. We may lawfully, as reasonable men, select *ourselves*. The historical order of the origin and growth of knowledge is otherwise. Man begins as animal: his first need is nutriment: his earliest knowledge relates to the food supply: his primitive science is all objective. But now we are no longer in that stage; we are in the critical stage; we survey our field in the interests of knowledge, not in those of the stomach. If we desire knowledge, if we want truth, and to avoid error, surely we cannot be wrong in gauging our own fitness for the attainment of knowledge. On the whole, then, it appears a natural and reasonable course to make selection of *ourselves*. Thus we obtain a

subject-matter for psychology, which is not open to the objection of making any unwarranted assumptions. *What* we are is left to be ascertained by the psychological analysis. Even the most suitable name may be left to be determined by the result of the examination—whether self, mind, consciousness, or any other. Only the fact that we can and do make a distinction between this *something* and the environment is taken as the point of departure for psychology. Nor do we tear away the *something* from the other *something* called the totality. There is no real abstraction; there is only selection for the purpose of better acquaintance with the part selected. So far, then, the proceeding is justified.

To set forth in detail the whole course of a psychological study of this *something* is beyond our scope. We are only to psychologise for ourselves so far as is necessary to test any psychological result of which we have to make use. Speaking generally, the conclusions offered to us are in the main identical with those which common-sense has arrived at. One school of psychologists must be excepted—the frankly materialistic. Ribot says—"The soul and its faculties, the great entity, and the little entities disappear; and we have only to do with internal events—events which, like sensations and images, are translations (so to speak) of physical events, or which, like ideas, movements, volitions and desires, translate themselves into physical events". Similarly Münsterberg—"A theory of the soul does justice therefore to the whole field of psychical phenomena if it assumes as the only function of the soul sensation characterised by quality, intensity and tone of feeling: a definite group of sensations we call will"[1]. Setting this school aside, we find that psychologists generally, James, Ladd, Sully, Stout, Baldwin, Wundt, Höffding, etc., take a common-sense view of mind or soul—although some of them scruple about the name. They attribute to, or tacitly assume in, the soul reality, actuality, self-evidence, immediacy, unity, variety, sensations, feelings, ideas, emotions, resolves, will, activity, moral character. These psychologists mean by the soul just what men in general mean. They have

[1] Seth's *Man's Place in the Cosmos*, pp. 68, 88.

not made any new discoveries in it; they find there all that, long before psychology began, the moralists, the theologians, the poets, and all men besides, statesmen, warriors, philanthropists, business men, have discerned in and ascribed to the soul. There is no dispute, no difference of opinion about the soul as given matter-of-fact. So far as knowledge and belief go there is unanimity. Only when the question of the ultimate *nature* or *essence* of the soul is raised do differences of view arise. It is therefore unnecessary for us to work out the psychological study over again. For all practical purposes the certitude of the self abides unshaken, even unassailed. Nevertheless since psychology raises the ultimate question as to the nature of the soul—and we shall have to consider some theories which are offered to us—it is needful to scrutinise the methods of psychologising which lead up to those theories.

The psychologist's mental operation is called by two names—description and analysis. "The business of all science is the description of facts."[1] Description becomes definition when any thing or fact is exhaustively described, so that its distinction from and relations to all other facts or things is made apparent. Inasmuch as exhaustive description is unattainable, perfect definition never is possible. Analysis means taking to pieces; synthesis means putting together. In physical science, analysis is specially a chemical term. A fer-oxide can be separated into two parts, iron and oxygen. Two things, iron and oxygen, can be united to form one thing, a fer-oxide. In psychology, analysis and synthesis of this kind cannot be effected. All that we can do is to notice a particular appearance in a complex whole of consciousness, and to describe it as it so appears. When in another complex consciousness a similar appearance occurs, we give it the same name as it received before. Repeated occurrences of like phenomena lead to the belief that these phenomena have a fixed character, and are in some sense existences.[2] Analysis in psychology is not an actual obtaining of separate things which we know each by itself, and of

[1] Kulpe's *Outlines of Psychology*, p. 1.
[2] Wundt, *Grundriss der Psychologie*, pp. 33, 107.

which we can assert that these things have an independent existence, but a recognition of particular features or aspects in a given whole, which recur now in one context, now in another. These contexts are the successive moments or presentations of consciousness. But we cannot really analyse consciousness into separate moments or presentations, of equal or varying duration. There is no gap, no dividing line, between one moment of consciousness and its predecessor or successor. The distinctions, past, present, future, are patent; but we cannot get at them separately. The consciousness which remembers yesterday and expects tomorrow is the consciousness of the present moment. The question then arises—is the use of the term *analysis* in psychology quite justifiable and safe? It exposes the psychologist, especially if he works under the strong prejudice that he is making an objective science, to the danger of imagining that his analysis is real, like that of chemistry, and not merely a description of a recognisable feature in an unanalysable whole. Analysis in psychology, we must ever bear in mind, is no more than description of some feature or quality discerned in consciousness; it never gives us an independent actuality which can be employed to account for, or explain, consciousness.

With this caution present to our thought, let us observe the psychologist engaged in the act of analysing. Now, in order to perform the process, he must have some one thing which he holds before his mind as the something to be analysed. This something is a unity. If it is not a unity, but already known to be a plurality of distinguishable and separable components, analysis has already done its work so far, and now not the thing but its constituents have to be analysed. The something then is a unity. But it must also show some signs of diversity—a plurality of states, or qualities, or properties. If it is not a plurality but one perfectly homogeneous thing, no attempt to analyse it can be made. This something which is to be analysed the psychologist calls *consciousness*. The name "consciousness" is recognised by every one, and does not appear to involve the assumptions which some suspect to lurk under the names mind, soul,

spirit. But how is it that this name *consciousness* has come to stand for a recognised unity? Partly, I suppose, in its contrast to the recognised plurality of objects in the environment. This distinction, however, is not easy to maintain. Where does consciousness end, and where does the external environment begin? Wundt's theory of the two points of view shows that the distinction between them seems to fade away — at least in the vision of the idealist. It seems to me that it is the unique isolation of consciousness which demonstrates its individual unity. My consciousness is mine alone, and no other mind can ever see it, or feel it, or be aware of it, in any direct way. And each one of us has his own isolated consciousness; while each of us knows that all the others have a like consciousness. There is nothing in the outer world, no separation of mind from matter, or of one piece or kind of matter from another piece or kind, so utterly distinct, so sharply demarcated, as the individual human consciousness from other human consciousnesses. That the consciousness enfolds variety within its unity is fact of immediate experience. If, then, there can be analysis, we may accept consciousness as the given subject-matter to be analysed. But this consciousness is a conscious being, such as I am and you are: it is not a mere *quality*. Abstract qualities are nothing apart from the beings to which they belong. There is no *hardness* apart from hard things, no *softness* apart from soft things. So there is no consciousness apart from conscious beings.

In the older analysis the term "faculties" was used for memory, judgment, imagination, conscience, etc.; but this way of speaking has of late been out of favour. The subject-matter is now considered under four heads: the senses and the intellect, the emotions and the will. No fault is to be found with this fourfold division so long as each of the departments is taken as the consideration of distinguishable aspects or activities of the one consciousness. Sometimes we have a threefold division into feeling, thought, will: sensation being regarded as the relation of the consciousness to the outer world through the medium of the body and its sense-organs. This way of looking at the facts has the merit of recognising

the corporeal side of the human being. There is nothing to offend us in general analyses of this kind; and also, perhaps, not much to help us. If we let the mind dwell too much in the separate compartments, and do not counteract the influence of this by sufficient attention to the real concrete unity, of which they are aspects, our conception of the whole may become artificial. It is, however, in the analysis which professes to be stricter and more thorough that I discern the most serious danger. I refer to that which analyses consciousness into elements and compounds, and compounds of compounds. We have (*a*) psychic elements distinguished into (1) pure sensations, (2) simple feelings, and (*b*) "psychic structures," (1) ideas, (2) compound feelings, (3) emotions, (4) will-processes.[1] Now, although we are plainly told that *pure* sensations and *simple* feelings cannot be isolated, that they are in fact abstractions, also that the structures and compounds are not wholly made up of the elements, I must regard this nomenclature adopted by the great psychologist as unhappily chosen and liable to mislead. The word "element" gets its character from the chemical elements, and carries with it the idea of atoms or molecules. It leads to the notion that our ideas, feelings, volitions, are a kind of entities or objects in their own right, which may be imagined as floating along, combining and separating, in the "stream of consciousness," as white and red blood corpuscles float in our veins. The "elements" seem to be regarded as possessing affinities and capable of fusion. The ideas seem entities which can coalesce or collide with each other. And the issue of it all is that the unity of consciousness, though verbally insisted upon, practically disappears; and we are left with a loosely connected mass of particulars, held together no one knows how.

In making an analysis, accuracy and completeness are indispensable. When a chemist has a bottle of water or a piece of ore given him it is an *object*, visible and tangible. It is outside of *him*, not only outside of his body; he regards it as a thing existing in a real world, independent of his con-

[1] Wundt.

sciousness. The thing *was* before it was given into his hands; the thing *is* when he leaves his laboratory to get his lunch; the thing is not affected by his thinking about it: it is only affected as he applies fire or some other physical agent. Taking this common-sense objective view of the thing he separates it into its elements, which are objective exactly in the sense that the analysed thing was objective. Now observe the psychologist analysing. What is it that is given to him for analysis? His own consciousness—that and nothing else. Who or what is the analyser? His own consciousness—and nothing else. What are his implements? Attention, reflection, comparison, judgment—all are himself, his own consciousness. And what are its results? Perceptions and judgments. These too are himself. There is no real separation of the datum into elements and compounds; and no part of it appears as an object distinct from the consciousness.

Let me now take an actual case. In my bed this morning I was thinking, and thinking about the analysis of consciousness. I noticed the situation: eyes closed; sensations of pressure in the back, in the soles of my feet, in the back of my head and in my arms on which it rested; sensation of warmth generally, of coolness in the uncovered part of the arms; a sound of church bells; a thought, "Morning Mass in the Pfarrkirche"; another thought, "Shadworth Hodgson took a sound as a specimen datum"; sensation of hunger; a thought, "no use rising too early, the coffee will not be ready"; another sound, a cock crowing; a thought, "where is that cock kept? I have never seen it though I have been here several weeks"; another thought, "observation of *difference*, church bell and cock's crow"; eyes open; sensation of brightness and colours of the painted ceiling; thought, "it is time to get up now".

In reflection upon the case reported above, one remarks that consciousness is simultaneous and successive. I cannot say that any one minimum of time contained only one single perception. It seems to me that always two or three sensations were present at once; the sensations of darkness, of warmth, of pressure; and all the time there was thinking. What would be the gain to our analysis if it were possible to discover a

single isolated "unit of experience"? It seems to me that in that case it would be impossible to learn anything from it while it remained alone. From one fact or premiss no inference can be drawn. Moreover the supposed "unit" if it is thought of must first have been perceived. Thus the single "unit" would display perception and memory of something perceived. But finding it impossible to obtain by analysis any one single sensation actually occurring alone, and impossible to think of it without thinking, I prefer to dismiss the notion altogether, and to study consciousness as simultaneous and successive; that is, to have in review more than one minimum of duration.

In reflection upon the consciousness, which lasted for perhaps ten or fifteen minutes, I discern a number of perceptions, thoughts, judgments, "which passed through my mind"; that is, each particular in the whole appeared as belonging to me, as momentarily part of my existence; and each was referred to, came to, *me* as a permanent being, who had had somewhat similar states of consciousness before. This is the common-sense belief: the first fundamental certitude, as I have called it. Dr. Shadworth Hodgson is of opinion that we ought not to recognise this self or mind at all in an analysis which is meant to be taken as a first analysis, the beginning of philosophical reflection.[1] But he does not show how this is possible. He states a case of his personal experience; he states it as his own, just as I have stated mine. He proceeds to reflect upon it, and proposes to himself to retain for analysis the state of consciousness which he has described "*minus* the idea that *I* as a real person am experiencing it". Now, here it is plain that the philosophical analysis begins with the process of deciding what shall be retained and what neglected. And this important decision is made by the self. Who, or what, conducts the process of critical reflection set out at length in his pages? Manifestly the same "I" as the experiencing "I"—Dr. Hodgson himself. I understand him to be fully aware of this, but to intend to conduct his reflection in the objective scientific method. As the chemist

[1] *The Metaphysic of Experience*, by Shadworth H. Hodgson, LL.D., vol. i., p. 39.

analyses his substance without introducing *himself* as a factor in the datum undergoing examination, so the philosopher is to examine his datum of consciousness, leaving it quite an open question whether he himself is anything or nothing. To this I take the objection, that on his own showing the philosopher actually is there by his own plain statement of the given case. The chemist does not undertake to analyse himself, but to analyse water or some other substance. The philosopher undertakes to analyse himself—his own consciousness, and is aware that his own consciousness is the analyser as well as the analysed.[1] It seems to me, then, that the omission of this important fact will vitiate the analysis. In order to justify Dr. Hodgson's method, it is necessary that he should first demonstrate the possibility of exhibiting a unit of experience detached from and independent of the consciousness analysed. This demonstration is not attempted: the proposal to omit the self is arbitrary. Secondly, even if we suppose, for the sake of argument, that a unit of experience can be got at in this *objective* condition, the consciousness or self is still present in the process of reflection, if not in the analysed, still in the analyser. Therefore it seems to me the proposed abstraction is an attempt by the philosopher to consider a datum of consciousness *as it is not* instead of considering it *as it is*. He cannot get the datum except as related to himself; he tries to examine it as an independent existence. The proceeding appears to me illegitimate, and one that will lead to a false conclusion.

I admit that in a philosophical review of our knowledge and beliefs it is advisable to lay aside all assumptions, or if that is impossible, to reduce assumptions to the fewest possible. In particular, we must not insist upon any *a priori* theory of mind or soul as "a spiritual substance," as "immaterial," "a free agent," or anything else. The *nature* of mind and the *nature* of consciousness may be regarded as problems proposed to philosophy, which the philosopher must not assume as already solved. But the existence of the self as a conscious being seems to me to be beyond the

[1] *The Metaphysic of Experience*, p. 37.

reach of question. Without it no question can be stated. Without it we cannot ask—what is it? or, Is there anything at all? Without it we cannot have the primary perception —"something *is* or *happens*".

Here we have to meet a demand for the production of the conscious being. "If anyone should here urge the objection that I am wrong, at any rate in omitting the perception of Self or the *I* from the first *analysandum*, on the ground that in all consciousness we have an immediate and self-significant perception of it, it will be incumbent on him to say *what* that perception of it is, wherein its self-significance or immediate content consists"[1]. This demand reminds us of Hume's complaint that when he scrutinised his experience he never could find *himself* there except as perceiving, or feeling, or thinking, or in some other state. The conscious being is always in some state of consciousness; can never perceive himself in no particular state. This disability appears to be inevitable. If it is not enough that he perceives himself in every state, I fear we shall never convince him that he is anywhere. At present, however, the demand takes a somewhat different form. It is a demand to be informed *what* the perception of the self is. We have asserted a *that*, and are asked to show *what* that is. But if we cannot show the *nature* of the fact, that is no reason for questioning its *existence*. You have to perform an analysis—you exhibit one component part and another and another—but there is still something left which you cannot extricate and label. This inability does not justify your ignoring its existence in the datum.

However the case is not altogether intractable. We have a given whole, from which we are bidden to discard "all ideas of the real origin" of its contents; "all ideas of the real object suggested"; and "also of myself as a real person". We are to retain "the colours, sounds, odours, tactual or other bodily sensations, memories, imaginations, etc.," but "only in the character of contents of experience". The problem is, in this arbitrarily mutilated presentation of consciousness, to find

[1] *The Metaphysic of Experience*, p. 39.

the self, or the consciousness itself. In the first place, I observe the philosopher has not eliminated the self from the immediate data, in spite of his purpose so to do. What he has withdrawn from the *analysandum is the idea of self as a real person.* But no one contends that the idea of self as a real person is demonstrable from the immediate consideration of any one presentation of consciousness cut off from all that preceded. Our knowledge and belief of the self, whatever it is, is the result of development, and is grounded upon all experience—not upon an arbitrary selection of a portion only of one moment of experience. What is to be found in that moment is what we call *the feeling* or *consciousness* of self. And this the philosopher could not exclude, because he notes among those contents of consciousness which he retains "memories," "desires," "volitions"—contents the character of which involves a permanent consciousness or self.

That we have no perfect knowledge of the nature of the self is admitted; that we have not a perception of the self distinct from the whole of consciousness is admitted. Within consciousness as a whole there are recognisable perceptions which are not the whole, though they all belong to the whole. If we are challenged to point out consciousness, as we point out a sound, or a colour, we cannot do it. But if we are asked to describe the real appearance of consciousness in connection with its transient states, then the demand can be met. It is the fact and the feeling that each one of these transient states and each part of each state is *mine.* *I* am the thing or being to which all these belong; in and for which they come and go. This becomes self-evident if we try to imagine the "sensations, memories, imaginations, emotional feelings, pleasures and pains, desires, thoughts and volitions" as existing apart from and without a self to sustain them. You might just as well try to imagine arms, legs, head, eyes, ears, nose, brains, heart, lungs, stomach, bowels as separate living things, each existing and functioning on its own account independently of all the rest. It will not do: the imagination is an absurdity. As the human body is a given unity, which being given can sustain the various notions, "hands," "eyes," "heart," etc., as its parts, so the human conscious being is

a given unity which contains the particular kinds of mental feeling and activity called "perception," "thinking," "desire," etc. In each case the unity is the immediate and perfect certitude. Neither mind nor body is immediately perceived as a whole, nor perfectly conceived at any time. If any one supposes that he has ever *perceived* a human body all at once and as a whole, even externally, not to speak of its interior, he is making the common mistake of attributing to perception what really is conception or imagination. The body of another is only seen on one side, only felt where it is touched. My own body has many parts inaccessible to my observation, and which are not consciously perceived. The anatomist dissects not the living body but a corpse. The conscious being is never at one moment of time conscious of all that consciousness is, can be, and can do. He sees only the outside of himself. But he perceives and feels *himself* in each and all his conscious states. In each of these he has an immediate perception of himself as involved in the particular state. What sort of perception this is can only be known by experience. A demand has been made that it shall be "immediate" and "self-significant". "Immediate" I take to mean "not inferential". Now the whole concept and belief we have in our own personality is, I think, built up by inference from the whole experience. But the perception or feeling I take to be immediate. The appeal is, of course, to experience: but as to this I think there is no disagreement. Whatever the difference of opinion as to the nature of the self, all admit we have a feeling of self—even those who doubt or deny its reality. What is meant by self-significance of a perception? A particular perception, say, of the colour *blue* is a perception of *blue:* and for it no *self*-significance can be claimed. But there is a self-perception connected with the seeing of *blue:* namely, that I see it. There is some discussion as to whether this self-feeling is always present: but, at least, it often is, and always may be present; that is, if attention is turned to the point the connection between the *self* and the particular sensation is at once perceived. The question now raised, however, is what *self*-significance has the feeling or perception of the self? Surely the question is need-

less. As the perception *blue* means *blue*, so the perception *self* means the self—just the self (1) as immediately felt, (2) as identified with the self believed in as the fundamental fact in all experience.

Another way to test this objective analysis is to watch the steps of the process. Take, for instance, a sound, the note C struck on the piano: in this analysis "it is experienced as (1) a sound of a certain quality, (2) having a certain duration, (3) preceded and accompanied by other experience"[1]. Further analysis separates (1) and (2) from (3): then we have left only *quality* and *duration;* the quality however is no particular quality, and the duration is not known as of any particular length, because as this is supposed to be the first "empirical unit" analysed, no others are yet known. What, then, is given or contained in this the simplest case of a unit of experience? The result of the analysis is as follows: "Our experience of note C taken as a process is a perceiving and a perceived (or percept) in one, a content perceived and the perceiving of it, or the fact that it is perceived, that is, makes part of consciousness for a certain length of time"[2]. Previously it has been asserted that "the experience of note C is not recognised, in the single and simple instance which we are analysing, as a case of experience. It is not from this instance by itself, but from this with countless others that our conception of experience is derived. Still less is it recognised as part of *our* experience. The Ego or Subject does not come forward in it as a single instance at all"[3]. And yet we have in the summing up "a perceiving *and* a perceived"; that is, something perceived, and that perceiving "a part of consciousness". Will this analysis bear inspection?

My first observation is the *unreality* of the whole proceeding. We are invited to contemplate and pass judgment on a "sound heard," under circumstances which do not happen within human experience. No human being can divest himself of all past experience, tear himself away from nearly everything that constitutes his present experience, and then as an abstract spectator observe a sound *as if* he

[1] *The Metaphysic of Experience*, vol. i., p. 46.
[2] *Ibid.*, p. 60. [3] *Ibid.*, p. 49.

had never heard one before. Secondly, whether under such impossible circumstances the said sound would be to the experiencer this or that, no one can positively say. I am inclined to think that the experiencer would feel a *something* happening, but I doubt whether he would feel *duration* or time. Until he has had more than one experience, and has formed or can form simultaneously, the notion of a permanent something, I hardly see how he could perceive *time.* At first I think there would be feeling of *something* present, followed by another feeling that the *something* had ceased to be present. But my third objection to the interpretation offered is the most serious. It seems plain that if the sound came as the first empirical unit of experience, there would be no consciousness of it at all; it would not be perceived! I mean, according to the analytical theory offered us, there is nothing and no one to perceive the sound. The note C is a something happening, but not in the experience of a self. That, by hypothesis, is excluded. In real experience, of course, there never is a first unit. Every real experience of human conscious beings of which we know anything has had many predecessors, has many companions. We are bidden to abstract from all these, and from the Ego, and are told to look and see what is before us. There is nothing before us, for we are not there. The sound cannot hear itself. We shall be reminded that it is not the *cause* of the sound in the external world which is now our affair, but the *hearing* a sound as a consciousness. Just so; I quite understand that, and what I mean is that there can be no division of the fact into a *hearing* which hears and a hearing which *is heard.* For two reasons: in the first place, the fact is one hearing and no more; and this fact does not divide itself in any way. It is one fact not two—and calling it two names "process" and "content," does not make it two. In the second place, there is, by hypothesis, no *hearer* present. The consciousness of which this unit is to be an element is not yet in being. One swallow does not make a summer. One happening does not make a consciousness. To imagine this first isolated item reflecting on itself is quite out of place. For there was nothing before, there is

nothing besides; and when the item is gone, there is nothing to remember it. To me it seems that the analysis refutes itself. It excludes the conscious being, and is therefore driven to hypostatise the empirical unit as a conscious being. The fictitious *object*, the element abstracted as it cannot really be abstracted from the whole of experience, is set up as an independent existence on its own account.

But in spite of himself the analyser has recognised the truth of the case. This first unit of experience, if we could get at it, would be a unit of consciousness, because it is the first step in the life of a conscious being. No hearing has ever happened except in a living organism that can hear. (If it is not presumptuous to speak so. Of course I am speaking of the order of nature as we know it, and no further.) And because this conscious being is the one indispensable reality, apart from which there can be no phenomena of consciousness, therefore every setting forth of these phenomena must contain or presuppose the consciousness. Dr. Shadworth Hodgson proceeds to consider a second case. Note D following note C, and remembering it, so that note C becomes the *object* of note D. But unless there is a permanent consciousness which unites C and D, how would the second conscious state be aware that the first had preceded it?

It seems to me that there is little or no difference among psychologists as to the real facts of consciousness: but the unfortunate notion of transforming these subjective facts into objects like those of the physical sciences, has led some of them to the mistake of denying immediately known facts, under the supposition that they can afterwards give us back these facts in the form of inferences from a chain of reasoning. Some, as Münsterberg and Ribot, expect to be able to show that all mental phenomena are directly or indirectly physical phenomena. But the less dogmatic psychologists stop short of this arbitrary assertion: they acknowledge two distinguishable classes of phenomena, the physical and the mental, which cannot be, by our knowledge, shown to be one and the same; thence the theory called psycho-physical parallelism. Whether *parallelism* is, and must ever remain,

the last word in psychological research it is not within our scope to decide; for we have turned our investigation in another direction, and are trying to understand the act and fact of *knowing;* that is, our ability to make any assertion, and its value or validity when made.

The two methods of psychologising which we have been engaged in contrasting are (1) the real or concrete way, in which the common-sense observer *contemplates* mental phenomena as they come and exist; and (2) the abstract objective way in which the scientific observer *analyses*, as he says, the same mental phenomena into elements and compounds. Both begin with a general survey of the facts. A comparison of my survey as given above with that given by Dr. Shadworth Hodgson[1] will show that the two are of the same character and have like contents. Working upon the data in the concrete, we begin with the fact that the self is consciously present as receptive and active. He has many perceptions and follows them up separately, one after another, noting their concomitance and their divergencies. A sound, for instance, is taken as an effect of the vibrations of an unseen bell in a distant church tower. This sound is then contemplated as a *hearing* by means of the auricular mechanism. The mechanism then is neglected; and the sound is considered as a perception in consciousness. Here the observation ends in a perceiving by a percipient consciousness of something perceived. The observation conducts back to the original whole of consciousness, and can go no farther. It is possible to follow it in thought genetically. We may try to imagine how hearing was evolved, and speculate on the first hearing by a new-born babe, or even by a babe in the womb. But in speculating upon origins, we have left the region of experience and knowledge, and have entered the region of hypothesis. And however we strain our power of imagination, we cannot pass out of the consciousness into a state of unconscious matter, which being unconscious, being only material and not mental, produces, or has somehow added to it, the consciousness of hearing. The babe has his organs of hear-

[1] *The Metaphysic of Experience*, pp. 38 and 46.

ing, but though these may receive and reproduce vibrations, material movements, they cannot, so far as we can see, produce consciousness. The conscious being must be there—if as yet dormant, never having had an actual perception. The first sound entering from the outside may awake the babe to consciousness, but cannot create the consciousness which it arouses to activity.

The analyser does not work backwards from the concrete reality to the region of origins, but forwards from imaginary original objects to the given whole. First of all, he sweeps the whole field with a rapid glance; he then dogmatically excludes from his data all that he holds to be knowledge derived by experience, conceptual knowledge it is called, and will examine only the immediately perceived in a supposed but unreal abstraction from the knowledge which is inseparably mixed with it. Having thus at his disposal a manifold of various contents, he selects from this one incident which he takes as a simple element, or empirical unit. This he "analyses," and endeavours to extract some certain knowledge from it. It has, he judges, two contents, *time* and *feeling*, and may be regarded in a dual character as a *process-content*. This, then, has again to be split up into its two parts, or nothing will come of it. He may take *time*[1] to be the part which belongs to or indeed itself is the consciousness. But this lies open to the manifest objections that *time* is, like space, an empty concept: by itself it is indistinguishable from nothing; and that it is difficult to extract the concept time from a first experience. Preferably he takes *process-content*,[2] and severs this into two parts: process, the perceiving; content, the perceived. But to this there is the objection that—"Neither of these two parts of the total experience exists apart from the other; they are distinguishable, inseparable and commensurate".[3] But if we admit that the two are *distinguishable*, I think this can only be by a subject who is more than the single process-content. Similarly, when retention and memory are extracted or deduced from original experiences, it seems to me that this is only apparent extraction: the real fact being

[1] *The Metaphysic of Experience*, p 59. [2] *Ibid.*, p. 61. [3] *Ibid.*, p. 60.

that the whole concrete experience contains retention and memory. However, the main point is that the analysis itself is unreal: it is an analysis of fictitious elements, of imaginary *objects*. The concrete reality is a subject, or consciousness, including within itself subjective appearances, which cannot be separated from it, cannot exist by themselves.

CHAPTER III.

PHYSIOLOGICAL PSYCHOLOGY.

THE physiology of the brain and the nervous system of man is part of a true objective science; the positive results of which we must accept, as we accept the positive results of chemistry and botany. Physiologists are quite sure that the brain is the organ of the mind, that the connection of mind and body is located in the brain and its appendages. Those who have no scientific knowledge can by mere common-sense convince themselves that the connection between their minds and the external world lies in their bodies. The body is evidently a middle term which unites the material world and the thinking mind. Scientific study of the body brings to light the interesting and important fact that the cerebral mass, with its greater and lesser prolongations, the spinal cord and the nerves, is a middle term between the mind and the body. Of old it used to be believed that the mind dwelt in the body, as a man in his house or tent. Now it is believed that the mind inhabits the brain and permeates the whole body by means of the nerves. This physiology has now for a good while been popularised, and everywhere commands belief.

It is one thing to say the mind dwells in the brain; another thing to assert that the brain *is* the mind. Some physiologists make this new assertion: and some psychologists accept it. But the assertion does not meet with the ready and trustful assent which we as a rule accord to any scientific doctrine. The reason for this hesitation is not, I think, chiefly the lack of unanimity among our teachers, but rather the difficulty of understanding what it is we are asked to believe. When we are told that the brain is the organ of the mind, we receive the statement because it seems to

us to have an intelligible meaning. But we shrink from the statement the brain *is* the mind, because it seems either to have no meaning or a false meaning. The statement has an unusual character or accent which sounds suspiciously. In ordinary cases an assertion is intended to be an explanation of one term or thing by another term or thing. "Light is imponderable" tells us something about a thing or happening called light; namely, that it has no weight, does not come under the law of gravitation. "The brain is the mind" seems intended to explain the predicate "mind," not the subject "brain". "Brain" is a visible and tangible thing, an *object* of a genuine science, in regard to which much is known, and as to its material existence there is no doubt. What *mind* is, whether it is a substance, a reality, or a mere phenomenon, or happening, has been disputed. I apprehend, then, that the intention, in identifying brain and mind, is not to explain brain, but to explain, and the fear may intrude to explain away, mind. Hence the hesitation.

Brain is mind: mind is brain. The statement is of identity. What is the meaning of statements of identity? In the abstract proposition A is A there is no explanation of anything: at most an assertion of fact or permanence; A is B is apparently not an identity. We have to look at concrete cases to get meanings. "John is my son" is a true identity, inasmuch as "John" and "my son" are the same person differently named; but it conveys information; it indicates John, and states a fact about him. Two and two are four is an identity; but to a child it is a piece of learning which he has to acquire. Moreover, in cases where the identical assertion conveys information, the identity seems not to be absolute. The meaning of the subject is not exactly the same as that of the predicate. Both refer to the same thing, but they regard it in different lights, or from different points of view. An equilateral triangle is equiangular; but the equality of the sides is one thing and the equality of the angles is another. Now, in the instance before us, if the assertion the brain is the mind is really to be accepted, and to become a part of our knowledge and belief, it must be so set before us that we shall be able to assimilate it and make it our own; and this

requires that it shall be made clear to us what it is we are told to accept as truth, and on what grounds we are to receive it.

Now, if I succeed in apprehending aright what the proposition "the brain *is* the mind" is intended to mean, it is that the reality which we call the *mind*, that is *the conscious being*, is an organism or mechanism called the brain and nervous system. As in a watch, we have a mechanism and its operation, an arrangement of ordered motions by which its hands move at uniform speeds and so measure time; in which we may regard the mechanism as the real watch while we consider the time-marking movement as the function of the watch; so I understand the proposition before us to assert that the masses of cellulous and fibrous matter which form the cerebral system are, as a whole, the real mind or soul; and that the movements, or currents of energy, of these masses constitute the consciousness which is the function of the brain. The grounds upon which the proposition is based are physiological; namely, the known connection between the nervous system and our sensations and muscular movements, fortified by the high probability of some kind of connection between mental feeling, thinking, and willing on the one hand, and unknown currents of nervous energy in the brain on the other. To appreciate the proposition, some acquaintance with the physiological facts is necessary; but here only the briefest mention of these can be made. Happily, nowadays, the main features of the mechanism have been explained in works easily accessible, such as *The Brain Machine*, by Dr. Albert Wilson.

From these sources we learn that the brain is composed of three chief divisions: the upper or prefrontal brain; the middle brain, including the larger portion of the cerebrum and the cerebellum; and the lower brain, or medulla; these being prolonged into the spinal cord and a wonderful network of fibres called nerves. The lower brain Dr. Wilson compares to the commissariat of an army, because it has to do with the vital and sanitary arrangements of the body—the heart, lungs, stomach, etc. The middle brain has to receive all impressions from the outer world, and to direct the movements of the body. This part he compares to the staff-officers of an army,

or to the officers and engineers on a steamship. For the middle brain is in communication with the upper brain, to which it transmits the information received from outside or inside the body. Finally, the prefrontal or upper brain, which he compares to the commander-in-chief, or to the captain of the steamer, is the part which attends, thinks, remembers, judges, wills, and sends out orders.[1] In this marvellously complex and delicate mechanism there is unity and subordination, but at the same time a measure of independence in the subordinate parts. By another figure, "the brain resolves itself into a sort of huge telegraph office, receiving messages from the outer world, and telegraphing messages to groups of muscles. There are lower centres and higher centres. It is not always necessary for the lower to appeal to the higher. In the spinal cord there are reflex centres"[2]. "The spinal cord is the highway or turnpike-road between the brain and the body. As a main road with telegraph wires may have small stations posted along the route, so the spinal cord in addition to nerve fibres contains groups of nerve-cells, which can transact business for the body below without sending the message on to the brain. Thus if a person be asleep and you tickle the foot, the message travels by sensory nerve to a nerve-centre or bureau in the cord, which sends down a message by a motor nerve to the muscles of the leg to withdraw the foot. This is called reflex action."[3]

This brief description of "the brain machine" brings to light an important fact: if the brain is the mind, it is not only the mind, but something else besides. No one looks upon the human body as the mind; for there are parts and functions of the body which are animal, and with which the mind has no direct connection, which it cannot control, and of which it is not even conscious. For instance, when once we have swallowed our food, it is no longer in *our* charge: all the processes of digestion go on without our knowledge or consent. There are parts of the nervous system which attend to all this business; but these parts are not parts of the mind. Within the cerebral system itself, then, distinctions

[1] *The Brain Machine*, pp. 34, 80, 81.
[2] *Ibid.*, p. 45. [3] *Ibid.*, p. 24.

are found. It is not alleged that the whole brain is the mind, but one part of the brain, not another part. If we look at the neuro-cerebral system as a whole, it seems to discharge two functions: the function of mental life, and the function of animal life. In it the body and the mind come into a unity. The old view that the brain is the organ or instrument of mind here finds its justification. One must at least recognise that some part of the brain is outside mind, and is the means of combination and communication between mind and body.

Again, with regard to Reflex Action, these observed phenomena seem to be the grounds upon which the brain has received the name of a machine or mechanism. The reflex action of the nervous system may be compared to that of the put-a-penny-in-the-slot machines. You put in your penny. Something happens in the machine which you do not perceive nor control: a little shelf protrudes, and you get your chocolate or box of matches. In the human body there are innumerable "slots"; the skin is full of them, and the eyes, ears and nose are also "slots". The external world drops in its coins of various sizes and values; rays of light or heat, air-vibrations, and other impressions: at the slot a nerve-fibre receives the impulse and conveys it to a nerve-centre in the spinal cord or elsewhere; this nerve-centre sends a current through another fibre to a muscle: movement is the result. It may be involuntary movement: it may be unconscious movement: but in any case this reflex action cannot be attributed to the mind. So far we are human machines or automata. But I submit that this is not sufficient ground for regarding the whole brain as a machine or mechanism. The term is objectionable, because it tends to obscure the important fact that the brain, which is said to be the mind, is the brain which thinks and wills. "Laying aside the sensory and motor actions of the brain, we have left two faculties—intelligence or knowing, and will-power or control."[1] If the brain does not possess intelligence and will and moral character, it is not the mind. If it does

[1] *The Brain Machine*, p. 153.

possess these active qualities, it is not a mere mechanism. The other comparison of the brain to a telegraph or telephone exchange is an illustration of this. To ring your bell and speak into your telephone will be in vain if the clerks in the exchange have all gone out to dinner. If the brain is the mind, then there is *mind* in the brain. On this ground it seems to me that the word mechanism had better be laid aside. At the very lowest the brain is an organism. It is not like a watch which requires winding up; it is not inorganic matter which only moves as it is affected by masses outside itself. The lowest type of organism, the amœba, moves of itself and on its own account; and so much independence every separate brain-cell possesses.[1] To the human upper brain, if this is indeed the mind, we must ascribe all the qualities and activities of mind, as seen in Shakspeare and Newton, in Milton and Cromwell. Let us keep this point well before us. The theory we now are considering may be true or may be an error—but in any case the mind remains wholly unaffected. It is just the same as it was known to be before the theory was suggested.

Why, then, should we not accept the neuro-cerebral theory of mind? It seems to have some recommendations. For example, it delivers us from the reproach that we cannot indicate what the self is, except by enumerating its functions, as the thinker, the knower, etc. What do you mean by the self? we are asked; and they say we can give no reply which satisfies the querist. Here, then, is a reply, which points to a visible and tangible thing; a thing about fifty ounces in weight, which we can point out to all challengers. Moreover there is an apparent fitness in it, which cannot but make an impression upon us. The self cannot be seen, cannot be shown, cannot see itself, is not to be got at as an object. And all this is true of the brain. For the brain which the physiologists dissect is the dead brain. The living brain cannot see itself nor be seen; it is conscious of other things but not conscious of its own shape, size, movements, or anything else about itself. In some ways the brain seems just

[1] *The Brain Machine*, pp. 4 and 40.

the suitable thing with which to fill the place of the self as an object. Why, then, should we not admit that the brain is the self? Let us consider objections.

The admission, it is said, would deny the spiritual nature of the soul and degrade it to the level of mere matter. But I think there is nothing of the kind to be feared. The human mind can fall into many errors, but it cannot think a contradiction. Now, if spirit and matter are so opposed that the material soul cannot be of a spiritual nature, then we cannot believe that the soul or mind is material. We know that the mind is of a spiritual nature; hence the ancient dogma that the soul is an immaterial substance. With the notion of matter then entertained, the dogma was necessary truth. Now that there is a strong tendency to regard the soul as material, that is, as the brain and its function, we observe the consequent tendency to level up matter to this higher requirement. All matter is to be "mind-stuff"—whatever that is—apparently it is a sort of half-and-half, a mixture of matter and spirit. Then different kinds of matter must be recognised: protoplasm is a very special kind of matter, highly complex; nobody knows how it originated. Lastly, there is the ether; who knows *what* the ether is? It seems almost a spiritual, an *immaterial* matter. These various suggestions are offered to alleviate the difficulty of the transition from matter to spirit. Lastly, as ever in man's extremity, appeal to the Deity is made. We are reminded of Locke's saying that he did not see why it should be impossible for God Almighty to enable matter to think if He saw fit so to do. It is certain that if we elevate the brain to the dignity of being the mind or soul, we shall raise our concept of matter accordingly.

The second grave objection is that to regard the brain as the soul imperils the belief in immortality; for the brain is part of a dying body, and it suffers dissolution like the rest of the corruptible body. But this objection also can be parried. First of all, has not science laid it down as axiomatic that matter and force are indestructible? If so, then the brain-matter is necessarily imperishable. The fact that the brain which is buried suffers chemical disintegration need not

be an insuperable difficulty; for who knows but that some portion of it escapes the general decay, and abides as a seed or nucleus for a new brain-mind? Or again—if we look into the whole facts—after all the physiologists do not really know that it is the coarse visible matter of the brain which is the mind. The mind may be the brain-energy, the nerve-electricity—some invisible substance, of an ethereal matter, which is essentially undecomposable. In fine, to imitate Locke, we may say—if Omnipotence can endow some special form of matter with the power to think, so that same Omnipotence can raise the thinking being from the dead.

I really think that there is no very formidable objection to the belief that some substance or energy residing in the brain is the mind or self. But at the same time I cannot see that this new belief is very different from the old. The fundamental contrast between matter as ordinarily conceived and the concept of soul or spirit is ineradicable. If, however, it is frankly acknowledged that we do not know what matter *is*—and this I hold to be the truth—and that at the same time we are equally ignorant of the nature of spirit, there seems to be no serious danger in the suggestion that possibly the two substances may be capable of combination, or even be forms of one unknown substance. Or, as Berkeley contended, the very concept of *substance*, whether as matter or spirit, may be a mistake. Therefore, if in the progress of physiology and psychology the theory of the identity of brain and mind succeeds in establishing itself in general belief, it seems to me that it will do no harm. What we know of the conscious being—its intelligence, its volition, its moral responsibility, its emotional and religious nature—this can never be shaken by any theory that may arise. At the same time I am not surprised that this new theory has not been at once universally accepted. On one side it has been mixed up with deterministic and fatalistic notions, with which it has no necessary connection, and to which it, when fairly considered, gives no support. On the other side, it lacks cogent proofs. The plain fact remains that both physiologist and psychologist are quite in the dark when they talk about the nervous currents or discharges which accom-

pany or represent the higher mental operations. They imagine these — but it is all guess work. Whether the physiologist will ever be able to demonstrate a logical process, or a moral conflict, or a religious or artistic feeling, in the terms of nerve processes, or brain-vibrations, I cannot foresee. But so far as my reading goes, there is at present no sign of the first step having been taken in that direction.

We shall all believe that the brain is the self when we cannot help believing it; and when the conception is familiar, we shall wonder that ever it was strange and seemed difficult and dangerous. But shall we ever be compelled to believe it? At present, at least, it must be looked upon as, if a plausible, and on some account a probable, still an unproved theory.

CHAPTER IV.

LOCKE'S PSYCHOLOGY.

THE substance or nature of mind is a problem as yet unsolved—perhaps insoluble. In the meantime psychology examines the manifestations and the activities of mind. At a time when the study of mental phenomena was not yet regarded, as it is to-day, as a separate science, philosophers in their attempts to understand the universe and our knowledge of it found it necessary to begin with a study of mind. To Descartes is ascribed the credit of turning the current of philosophical thinking into this new channel. From his time onward philosophy has sought its basis in psychology.

Descartes began by recognition of the certitude of the self, and attributed certainty to its clear and distinct judgments. This, indeed, is the common notion involved in the definition of knowledge. When we begin to think at all about the world in general we have already some certain knowledge and belief. If it were not so, philosophical thinking could not even begin. As a starting point, Descartes' position is indispensable and unassailable. If I do not and cannot know anything, I had better cease to think. If I do know something, what I know clearly and distinctly is knowledge: and such knowledge must be, and is, accepted without cavil. This rule holds good for all practical purposes; but in philosophy it does not carry one far. For instance, this certitude of the self is not so clear and distinct as could be wished. Strength it has and necessity, but not exactly clearness and distinctness; for these qualities imply definite outlines, marked separation from all other things; whereas I find myself not easily definable, and very closely intertwined with my environment.

Our own great Locke, a practical, sagacious Englishman, undertook the study of the Human Understanding; and pro-

duced a work which has had a lasting influence; nevertheless, it must be said he fell into initial errors which entangled him and his successors in a mesh of perplexities, from which philosophy has not yet fully extricated itself. Here I may intrude a personal observation. It has seemed to me an audacious proceeding to criticise living thinkers of the first rank, and condemn their judgments as erroneous. But I observe that they also sit on the judgment-seat, and pronounce such world-teachers as Aristotle, Plato, Locke and Kant as, in this respect and that, quite in the wrong. And there is no help for this. If a man thinks at all, he constitutes himself a judge: he must in his own mind say "this judgment is true," "that is false," whether it comes from an Aristotle or a Kant. He cannot merge his own judgment in that of any other man, however superior he may feel that other to be; because, in order to become a disciple and adopt the other's judgment, he must first judge whether that other is *the* true intellectual master. So it is; one age criticises and finds fault in the philosophy of preceding ages, and there is no prospect of finality yet. This, then, is my apology for what may appear presumptuousness in contradicting great authorities, whether living or dead. And so I return to Locke.

Locke's famous comparison of the mind to a sheet of white paper has already been noticed. Now we have to discuss an error which, though less noticed, has perhaps been more mischievous. According to him, we know only our own ideas. These are the *objects* in respect to which we employ our thoughts, and knowledge is a judgment as to the agreement or disagreement of these ideas with each other. He explains his meaning unequivocally. Idea is "that term which I think serves best to stand for whatever is the object of the understanding when a man thinks".[1] "It is past doubt," he says, "that men have in their minds several ideas, such as those expressed by the words whiteness, hardness, sweetness, thinking, motion, man, elephant, army, drunkenness and others."[2] Whiteness, hardness, sweetness, we should easily

[1] *Of Human Understanding*, Book i., chap. i., sec. 8.
[2] *Ibid.*, Book ii., chap. i., sec. 7.

call "ideas" without meaning thereby that they are only ideas; but to call man, elephant, army, "ideas" seems unnatural. Locke, however, meant what he said. These "ideas" are of two kinds: those which come from sensation, and those which come from reflection; or ideas derived from external sense, and ideas derived from "internal sense". In explanation, he says that the "senses convey" the ideas of the former class into the mind from "objects" which "produce those perceptions".[1] This seems to be, but is not, inconsistent with his assertion that the *ideas* of sensation are the objects in respect to which alone the mind has knowledge. For although Locke believed, as we all do, in the existence of the external world, it was his opinion that we are not conscious of and cannot know those external objects; cannot even be quite sure that there are any outside things at all: we can only *know* our *ideas*. "Since the mind, in all its thoughts and reasonings, hath no other immediate object but its own ideas, which it alone does or can contemplate, it is evident that our knowledge is only conversant about them." "Knowledge, then, seems to me to be nothing but the perception of the connection and agreement or disagreement and repugnancy of any of our ideas."[2] He permits, indeed, the use of the word knowledge in respect to external things, but only with the reservation that this knowledge is not certain, intuitive, demonstrative. At the utmost, this quasi-knowledge only extends to the simple ideas; therefore not to "things," all of which are complex. And even as to these simple ideas, "this knowledge extends as far as the present testimony of our senses, employed about particular objects that do then affect them and no farther".[3] That is, I know this paper as a visible white surface while I am writing, but the moment I close my eyes I do not know it as existing. While I sit here I know the side of the room in front of me, but not the side of the room behind me, not even that there is a side behind me.[4] Locke was perfectly aware that his theory of knowledge left it an open question whether this whole ex-

[1] *Of Human Understanding*, Book ii., chap. i., secs. 3 and 4.
[2] *Ibid.*, Book iv., chap. i., secs. 1 and 2.
[3] *Ibid.*, chap. xi., sec. 2.
[4] *Ibid.*, sec. 11.

ternal world is anything more than a mere dream or imagination of our own minds; and has no reply to this objection but this, that the ideas, whether they have real objects or not, equally cause real pleasure or pain in us.[1] Locke sums up the whole with the conclusion that we have certain knowledge of ourselves by intuition, of God by reason, and of other things by sensation,[2] meaning, in the last case, that through our sensations we are led to suppose that other things exist; although we only know our ideas of these things, not the things themselves. Here we have the origin of the idealisms of Berkeley, Kant, Hegel, Schopenhauer and their followers.

Locke's idealism was not thorough-going. He retained an imperfect conception of a dimly-descried something of a material nature which causes the ideas. Berkeley removed *matter* out of the way, and constructed a purely idealistic theory by regarding "ideas" as the direct effects of divine causation, the Infinite Mind operating immediately on finite minds without the interposition of material substance. Hume pushed Locke's theory to an extreme in another direction. Locke took all ideas to be copies of objects: Hume regarded ideas themselves as copies of *impressions*, the impressions being sensations and simple feelings. Among these *impressions* he searched in vain for an original of *mind*, and hence deduced the inference there is no mind. We are, he said, but bundles of impressions. Kant reasserted mind as the abstract thinking "I" endowed with the *forms* of intuition, space and time, and the categories of unity, causality, etc. His idealism, like Locke's, was incomplete. Things-in-themselves were left outside as really existing, but inaccessible to human knowledge. Kant's successors rejected the notion of things-in-themselves, but retained idealism, striving in one way or another to bring it to a perfect monism. On the other hand, English and Scotch philosophers neglected Locke's idealism, but clung to the sensationalism which was included in it. The influence of Locke's theory is far from exhausted at the present day.

[1] *Of Human Understanding*, Book iv., chap. ii., sec. 14, chap. iv., sec. 1.
[2] *Ibid.*, chap. ix.

Locke is classed, and deservedly, among the philosophers; but he did not profess to be one. He was rather what we now call a psychologist; and his immediate purpose was to solve the problem of knowledge. Seeing, then, that we are studying knowledge, it is most interesting and important for us to contemplate this standpoint and theory of Locke: the more so, because nearly all subsequent psychology and philosophy seems to branch out from this root. Whether it agrees with or disowns Locke, it seems to be unable to shake itself free from his influence. And yet recent psychology, so far as my reading goes, seldom refers to Locke, and hardly any one is at the pains to point out where he is at fault. Modern psychology, of course, vastly surpasses that of Locke's time, and might excusably think the crude and defective mental analysis which Locke made as almost beneath notice. Yet Locke was a great thinker, and the examination even of his errors will repay us.

Locke calls everything an "idea" which is an object of thought. Instead of the word "idea," we will use the expression *something is* or *happens*, which will stand for a sensation or simple feeling as well as for a complex object. This *something is* or *happens* is usually taken as a complete expression of an actual fact; but at the outset we must observe it is *not* complete. The full and true statement is, *something is or happens to or in me:* in other words, *I am conscious of something which is or happens.* Given such a consciousness, it may be made subject-matter of thought and reasoning. Take such a fact as "a stone" and such a happening as "the stone falls"; neither of these can think, nor do they contain in themselves any power or tendency to produce thought. Locke takes the thinking mind for granted; and proceeds at once to consider "stone" and "falling" as ideas. Hume, however, could find no "mind" among his ideas; therefore would not permit us to take it for granted. Where, then, shall we find the mind? We have observed that one single "something is" is a something which exists for a consciousness but is insufficient as basis of thought by itself alone. But we also observe that there is no single "something is" by itself alone. A first fact of consciousness or knowledge is unknown. Every actual

"something is" was preceded by another, and that by yet another; and, moreover, no present "something is" is really alone. The statement is an abstraction out of a complex. "That is a horse" is not a full report of a present fact: the horse is "on the ground" or "in the water" or somewhere. The true statement from which we must set out is not "something is" but "many things are"; not "something happens" but "many things happen". It is this plurality of things and events which brings the mind into evidence. In the single case of bare consciousness, taken by itself alone, there is always a duality: it is *a consciousness of something*: it is subject + object. We must not be led astray by the form of the word conscious*ness*, as though it might be conceived as a quality or property abstracted from other things, like white*ness*, hard*ness*. Consciousness is not adjectival: it is a conscious being. In "that is a horse" you cannot take the existence of the horse then and there as the substantial thing, and the consciousness of the fact as an accident, or quality, or property of that thing. The horse is sentient, and may have a sort of consciousness for all I know: but the horse's consciousness of itself is not my consciousness of it. And the statement may be "that is a tree" or "that is iron," to which things not even sentience is attributed. Inspecting the actual facts of consciousness, we observe that in each single case of "something is or happens" the consciousness is *the* substantive, the main and most important thing while its particular state or object at the moment is adjectival to it. "That is a horse" fully stated means—I see a coloured form, or feel a soft, warm resistance, which I know to be a horse. In the nature of *attention* it is involved that I may be at that moment so interested in the horse as hardly to *feel* myself; but this does not alter the real character of the whole fact. What brings to light the conscious being is reflection on the plurality of states and objects, in all of which the conscious being is the uniting fact. The conscious being is one and the same in each and in all; is the one given permanent thing in contrast to all its transitory states and objects: nothing else is immediately known as permanent: consciousness is the basis and background upon and against which all changes occur. We mean the conscious "I"

in every "I see," "I hear," "I wish," "I am afraid," "I act," "I suffer". Locke wisely took the certitude of the self for granted. "We know ourselves," he said, "by intuition."

We return now to the "something is or happens". This we have seen contains the self; it is subject + object. But, according to the nature of attention, in any single instance it is the object to which, probably, the attention will be given. And thus, by abstraction, the subject may drop out of sight and objects remain in view. Here we are at the stage where Locke surveyed the scene and considered that "the ideas" are the mind's objects: although he had a dim notion of "objects" as the causes of ideas. It seemed to him that the mind "hath no other *immediate* object but its own ideas"; that it can only contemplate these, cannot contemplate anything else; that if there are external objects, the mind cannot know them, cannot even think about them. This misapprehension of the nature of consciousness has already been considered; but let us again ask—Why should there be any talk of external objects at all? Having a given unity, though of a dual character, subject + object, how comes it that these are separated into a subject apart from the objects, and objects independent of the subject? If we meditate upon this "something is or happens," it appears that these two are not equally original and independent facts. You cannot begin with either indifferently. "Something is," in the first place, and then "something happens," for what we mean by "happening" is some *change* in that which is. If all the contents of experience were changes, and nothing but changes, the statement "something is" would not be required nor be employed. That "things are" is the fundamental fact and the earliest observation; then after that the fact that things change is noticed. Unless you can first say "it is," you cannot say "it is changed". And everywhere and always "happening" is change of, or in, or in reference to a thing which is. Movement is the most common and most conspicuous form of change; but in order to move, the thing must be; and so with other changes of shape, colour, intensity, quality, all these demand for their basis a "something which is". Here let us note that these assertions do not derive

their force from the mere meaning of words, nor from mere logical compulsion. Of course we are bound to be self-consistent in our use of language; and *if* we attach certain meanings to words, we must in our reasoning adhere to those meanings. But we are now employing words as expressions for facts of consciousness; for that which we see, and feel, and think and know. And the strength, the necessity, of these assertions lies in their being expressions of the consciousness and knowledge and certainty of universal experience. Again, it is important to notice that here we mean the common actual experience: and this must not be strained out of shape, but taken as it is. For instance, when we say "something is," we do not say, nor mean, that it is eternal, that it is immutable. The "something is," upon further reflection, in almost all cases is seen to have only a limited duration of existence, and to be within that duration partly changeable. But the assertion "something is" does not include these further thoughts. The plain straight-forward thinking which deals with the primary facts of consciousness, and expresses these in words, must *not* be taken to include every possible implication which may be found there: but only that meaning which actually is there. If the logician or the philosopher can prove that certain consequences necessarily follow from these assertions, he is within his right: but if his reasoning depends for its premises upon the assertions of common-sense and general experience, then he must be careful not to go beyond the *meaning* which common-sense asserts.

With this warning in our minds, let us address ourselves to our question: how comes it that we think of *objects* as existing permanently, outside of, and independently of, ourselves? First of all as to the *permanence:* something enters into my consciousness, abides there for a short time, and then is no longer there; why should I attribute to it a permanent existence? We have to consider the source and character of this notion of permanence. This notion is just the contrast of what is to what changes; of the mountain which abides the same in summer and winter, in sunshine and storm; in contrast to the clouds which gather and disappear, the snow which falls and melts. To be the same with itself throughout

a duration of time, this is what we mean by permanence, and everything has some duration of which we can say "it is". As I sit at my window a horse trots along the road, turns a corner, and is hidden from view: it is evening, the sun sinks below the hill, and is gone. Why should I regard these objects, sun and horse, as still existing now that I have no longer the evidence of my senses that they exist? The question once put seems difficult, demands grave consideration. But this *feeling* of strangeness and difficulty is perhaps unjustified. For another question also can be put: why should I *not* believe the continued existence of the things? If we look at the case as it stands, without any further consideration, there is no reason whatever to suppose the non-existence more likely than the existence; one cannot even say the two probabilities are equally balanced. When I see horse and sun I mentally assert "there is a horse," "there is the sun". These facts so taken as they immediately appear, contain nothing to suggest ceasing to be. There is in the facts no reason for even putting the puzzling question. We put to ourselves questions which perplex us, and are very prone to think that therefore the question indicates some serious reason for dubiety; that the facts called in question cannot be so simple and so sure as we previously supposed them to be. We thus begin our investigation under a prejudice: and this is a mental bias. In this case if we suppose ourselves in total ignorance of everything except that immediately before the mind, namely, things in consciousness, and the question whether they also exist out of consciousness, there should be no grain of prejudice in favour of the conclusion that they do not exist except when in consciousness. The question is frequently discussed quite otherwise; with a tacit assumption that unless positive proof of the continued existence can be given the notion that they do continue is absurd. I contend that the presumption is, and ought to be, the other way. All knowledge is expectation, and expectation is at least a belief that it is more probable that what is outside consciousness resembles what is inside than otherwise.

The facts are a number of successive states of consciousness with a variety of contents. In each of these states the

consciousness is one continuous consciousness, but its contents are many and diverse. At present we are concerned with the objects called external things, leaving out of sight our internal feelings. Each state of consciousness is a kind of unity, consisting of consciousness *plus* object or objects. The question is raised: why should we regard these objects, such as sun and horse, as real things having a permanent existence independently of the consciousness? And to this I retort—why should we *not* so regard them? The conscious being is permanent, and does not *feel* that it is dependent upon any thing else, certainly not upon these objects. Its assertion is "I am". As it thinks itself as a permanent existence, not dependent upon objects, it is natural that it should think that the objects exist similarly. So children and savages personify inanimate things; think them alive and volitionally active. This "animism" is a detected error, and the idealist may say that to allude to it damages our case. And this is our propensity to run from one extreme to the other, and therefore we venture to bid the idealist to be careful. Mankind has learned to discriminate between animate and inanimate things, but some philosophers went so far as to deny to animals not only intelligence but even sentience. Biologists now discern a measure of intelligence in the higher animals at least. The idealist has good reasons for distinguishing between inorganic matter and conscious existence, but he cannot on this ground found a denial of material existence altogether.

If the disappearance of the things from consciousness is itself offered as a reason for the opinion that the things cease to exist when they cease to appear, this argument rests upon one or both of two general conceptions: unity and causation. The first argument against the permanently existing external objects is based upon the notion that each separate moment or presentation of consciousness is a unity complete in itself, which comes to be, exists, and then wholly ceases to be. Then the continuous consciousness is regarded as a unity made up by adding these successive moments together. From this the conclusion is drawn that outside of this consciousness, so regarded, nothing whatever exists. But this conception of the unity of consciousness is not to be accepted blindly. No

unity that we know, or can imagine, is an absolute, changeless, homogeneous, unity. A unity is a whole consisting of parts bound together by a uniting principle which permits of some changes within itself. Thus an egg is a unity, and a tree is a unity; but the most intimately known unity is the conscious self. Of the two factors of the state of consciousness, the self is *the* unity, whereas its objects are multiple: horse *and* sun, at the same time, and perhaps several other things besides. Consequently if the whole consciousness is and must be taken as a unity which includes everything, the things must be subsumed into the self, as somehow its qualities or modifications. The experience of dreams suggests this possibility. No doubt this argument from unity, helped out by the analogy of dreams, has had great weight with the idealist. But is it a given fact that consciousness and its objects are a unity *of this kind?* Each successive state of consciousness is in some sense a unity: but is it a unity *in this sense* of an abiding whole with self-contained modifications? Most certainly it is not. There has been a confusion of thought between the continuous permanent conscious being and its successive momentary states. Each transient state, while it lasts, is a unity of the conscious being with the thing or things perceived. They meet and conjoin for an instant of time in the union of subject and object. In the next moment the union is dissolved. It has been overlooked that there are many forms and degrees of unity. There is the unity of a heap or mass of matter; of an organism, such as a tree; of two or more individuals, as of man and wife, a family, a tribe, a nation; also of a species, a class, a genus, an order. The unity of a conscious subject with these things, horse, sun, etc., in the act of perception is a real unity, but of a fleeting nature: it is not a permanence, such as the unity of the conscious being is: and therefore to argue from the temporary conjunction of my consciousness with horse and sun in a sensation and perception to the conclusion that horse and sun are *nothing but* modifications of my consciousness is inadmissible.

The other ground on which idealism, if it is true, must rest is causation. The entrance of the object into consciousness is taken as the cause or ground of the *being* of the object; *esse*

est percipi. Its disappearance, therefore, from consciousness is its non-existence. This argument proceeds on the assumption that our sole ground for belief in the existence of things is their presence in consciousness. But this is demonstrably false. In the single state of consciousness in which I see a horse, my consciousness is not the whole and sole basis of my assertion "that is a horse". My consciousness is a sensation of vision. Vision is consciousness of form, extension and colour. A horse is not form, extension and colour: he is a living animal, occupying space, smooth and warm to the touch, having many qualities not in consciousness, when I say "that is a horse". I do not believe in real external things on the ground of consciousness alone, but on the ground of that putting together of different consciousnesses, which we call knowledge. I know that the appearance in my consciousness does not *cause* the horse to come into existence; but, on the contrary, the horse being in existence causes its appearance in my consciousness. This is knowledge, not given immediately in one momentary consciousness, but through and by means of all the successive states of consciousness.

We conclude, therefore, that there is no *a priori* presumption in favour of the non-existence of the real things which appear to our consciousness; that the only two imaginable grounds of an argument against their permanent and independent existence, unity and causation, are upon examination seen not to be grounds for believing the non-existence, or doubting the existence, of real things. It remains, therefore, only to ask how it was that Locke was led into the error that our mind can only know "ideas"? This can be traced to three causes combining together: the very slight and superficial character of his preliminary contemplation of the immediate facts of consciousness; the influence of mathematics; and the habit of abstract thought. Locke was a philosopher who mused in solitary reflections on man, the world and God; on what we think, and know and believe; on conflicting opinions; and on the source and standard of truth. These topics he was wont also to discuss with his friends: Sir Isaac Newton, probably, among the most interested. In these solitary meditations and these grave conferences he actually had his own thoughts and the thoughts of his friends as the present objects of consideration. These thoughts represented things, and in some cases actually were mental images of things. In the Cartesian philosophy, then regnant, the mind or "I" was accepted as the one given certainty, and clearness and distinctness of thought was the guarantee of truth. The supremacy of mathematics and the force of its logical demonstrations corroborated this view of knowledge. The objects of mathematics, its numbers, points, lines, surfaces, figures are ideas, mental images abstracted from sensuous things, but possessed and dealt with independently of these. And in mathematics man attains to a certainty and universal agreement which afford a striking contrast to other fields of thought. Thus all the materials, all the inducements, were present to his mind; and he formed his theory accordingly. But he did not bring his theory out into the broad daylight and compare it in actual experiment with the primitive consciousness and immediate knowledge of common life. In his own habitual practice of thinking about thoughts as the representatives of things, he overlooked the fact that children, the uneducated, a large proportion of mankind, think about things directly without the interposition of representative ideas, and that he himself also was, as every man is, in his actual dealings with present visible and tangible things, conscious of the things themselves, not of intermediate ideas of them. This one oversight marred his theory. In a large proportion of our thinking, the things referred to are absent; these absent things are represented to the mind sometimes by "ideas," that is, by mental images, but not always. Visible things, but *only* visible things, can be represented by mental pictures. Tangible and other sensible things may be sometimes recalled to mind with accompanying sensations something like the sensations caused by the actual things. But even where such mental "reproduction" is possible, it is by no means necessary. Max Müller's theory that we think in *words* seems to me nearer the truth than the assertion that we think by means of pictures in the mind or reproduced sensations. However this be—and I would not dispute the revival or recurrence of

sensations as a factor in the evolution of thought—the fact remains that when we have the *thing* actually present in consciousness, we have no representative "idea," no image of the thing coming between it and the mind. What we *see* is the thing, what we *handle* is the thing, what we *hear* is the thing, that is the sound itself. And the *object* we then think of is not an "idea" but a real thing. Commenting on Descartes' axiom, Riehl says: "If we start with the empirical consciousness which alone is immediately given, we must say *cogito ergo sum et est*. Not my self-consciousness but my consciousness is originally given; inner experience does not precede outer in time or in thought."[1] In every concrete consciousness not the subject alone but the subject conscious of the object or thing is the actually given fact. The mind is immediately conscious of, apprehends through the senses, the real external thing. The *understanding* of the thing, as well as the *understanding* of the mind itself, has to be slowly and laboriously worked out; but the whole age-long puzzle as to how the mind can cross the chasm between itself and the real world is as needless as it is perplexing. The reality is given to us in consciousness, otherwise all human endeavour to reach it would be vain. Here Wundt is right: "Not to create objective reality out of elements which of themselves do not yet contain it, but to keep objective reality where it is in our hands, and to decide respecting its existence when any doubt arises—this is the true and only practicable task of the science of knowledge. The old rule: out of nothing, nothing can come, holds good here also. Where no reality exists, all the arts of logical subtlety will never bring it into existence."[2]

[1] Introduction to *Science and Metaphysics*, translated by Fairbanks, p. 140.
[2] *System der Philosophie*, second edition, p. 99.

CHAPTER V.

WUNDT'S THEORY OF EXPERIENCE.

WUNDT'S psychology has special interest for us, because it closely approaches the problem of knowledge. Locke held that we only know our own ideas. Wundt is an idealist. He holds that one word *experience* covers the whole range of actual and possible knowledge. If philosophic speculation can in any way transcend experience, it is only by hypotheses which are permissible in order to fill up gaps in our knowledge, and so to remove contradictions and bring the sciences into a unity. But all such speculation is excluded from psychology. The distinctive character of Wundt's psychology is this: it does not take mind for its subject-matter; nor mental phenomena; but all human experience, mental and physical, every thing we see and feel and know and imagine, without exception. Hence in his view psychology is the science of experience in general. Experience is one single connected whole, including everything: but this experience falls apart into two divisions, not by undergoing any change in itself, but in consequence of our regarding it from two points of view. The first point of view is that of original *immediate* experience, which belongs to psychology. This he considers to be the true view. The other point of view is that of *mediate* experience, which belongs to the physical sciences, and is so called because these sciences regard their objects not as they are actually immediately given, but, by means of an abstraction, as independent of the Subject. This abstract view is a departure from the reality of experience. The difference between this and the older psychologies is fundamental and all-pervading. Wundt does not begin by dividing the phenomena into subject and object, mind and matter; on the contrary, he begins by denying the truth and reality of these

distinctions. The original which is the true, the real experience, does not contain them. They arise from an *abstraction;* that is, there is no such division into subject and object in the really given experience: it is only we who arbitrarily think the distinction. Consequently Wundt does not divide the phenomena, the facts, the actually existing experience, into two regions, one given to the psychologist, the other to the physicist. He first claims the whole region of experience to its utmost verge in every direction as the domain of psychology. Next, he observes that physical sciences exist, in which a portion of the phenomena of experience are considered as though they were objects outside and independent of the experience. This way of looking at them is the abstract objective way: it seems to come to us naturally, and is practically convenient; but Wundt holds it is not fundamentally and really a true way. Hence the physical sciences are regarded as subordinate to psychology. They have no independent authority. They are an offshoot from the tree of experience; or we may compare them to artificial canals which divert a portion of the water of a great river in different directions, and, having done their work, again rejoin the main current. Psychology is the supreme authority: it represents the real truth of experience: the physical sciences are of secondary rank and importance. In the end, when philosophy takes up the work of psychology, it will put these physical sciences in their proper place. This brief general account of the character of Wundt's psychology will remind the reader of views which he has met with in previous chapters. To some extent I am indebted to Wundt, but his system taken as a whole seems to me not to stand criticism.

What is this one and all-embracing *experience?* He tells us "(1) The inner or psychological experience is no particular province of experience, but it is the immediate experience in general. (2) This immediate experience is no mere passivity, but *a connection of occurrences;* it does not consist of objects, but of processes, namely, of the universally-valid human facts of consciousness and their regular inter-relations. (3) Each of these processes has on the one side an objective content (Inhalt), and on the other side is a *subjective occurrence*, and

in this way involves in itself the universal conditions of all knowing as well as of all human practical activities."[1] Experience, then, in Wundt's psychology, means the living stream of human consciousness in its continuance and totality. It is what our psychologists mean by conscious experience: all that we perceive, think, will and do: all that happens to us, and all our behaviour in response to the environment. But it must be noted that Wundt does not acknowledge any *environment* consisting of *objects*. "*It does not consist of objects but of processes.*" These processes, however, have two sides: there is the subjective side, a happening in the experience; and there is the objective side, something which happens. This seems an obscure saying. How, if the whole is a connection of *occurrences*, of *processes*, and contains no objects, do the processes themselves show a *subjective* side and an *objective* side? This obscurity is supposed to be cleared away by the explanation that the distinction of subject and object is not a part of the original, immediate and ultimately real experience, but arises through the abstraction which has already been pointed out. It is a defect, an inevitable defect, in our knowing that we divide the *given* occurrence into subjective side and objective side. But, at last, the reality prevails: we return again to the actual immediate truth when we discern that *our ideas* are originally *the objects.* Let us briefly consider the subject-matter of psychology, experience; the division of this matter by regarding it from two points of view; and then the results of the psychological analysis.

Experience means the whole sum, mass, or stream of living conscious experiences taken as a unity. The first question is taken *by whom or what?* Within the experience Wundt discerns no mind or self which is the unifying core or centre of the experience; there is indeed an *ego*, but its nature is obscure, and it does not cover the whole of the experience. "The Ego is nothing but the connection of the feelings of activity which continually recur with vague, but still in some of their constituents, namely, those which refer to the body, relatively constant sensations and ideas."[2]

[1] *Grundriss der Psychologie*, von Wilhelm Wundt, p. 18.
[2] *System der Philosophie*, von Wilhelm Wundt, p. 40.

But this Ego is chiefly the Will, and the Will "can in no way be accounted as a universal psychic fact".[1] Wundt does not allow that a mind or self is clearly given in experience as a distinctly recognisable entity. "Our mind is nothing else than the sum of our inner experiences."[2] The mind is thus just the sum and connection of consciousness.[3] Wundt refuses to admit the mind or self as a real being in any other sense than the totality of the conscious experience. Who or what, then, observes and analyses this totality? Who psychologises? The answer is the imaginary abstract *ego*. Wundt, in spite of his own judgment that the objective way of looking at things, which is the abstract objective way of science, is a vice or misfortune, a departure from the truth and reality of the immediate experience, nevertheless adopts this way in his psychological analysis. He would make psychology an objective science. Therefore the whole of his psychological work is prosecuted from an arbitrary and unreal standpoint. *We* know that the work is the work of a self, named Wilhelm Wundt. *He* does not, within his science, permit the assumption of an individual mind as a real and really known being. The conscious experience is the given reality, the abstract spectator of this conscious experience is ignored even while it is being assumed.

The second question is—*what* is this experience? We may not say it is the experience of a Subject or Self. What is it then? It is consciousness, it is immediate, it is a unity, it is a coherence (Zusammenhang) and connection (Verbindung) of ideas, feelings, volitions, activities. To the imagination it stretches out like an immense nebulous comet without a nucleus. There is no central point, no principle of cohesion: we apprehend nothing but a vast vagueness without definite form, without solid substance. I find myself unable to grasp it in thought. Take the explaining words and examine them. Consciousness as a quality of a mind or self, I can in a measure understand, for I am conscious; but consciousness which is not the consciousness of some living thing I cannot understand at

[1] Page 39, see also p. 40.
[2] *Lectures on Human and Animal Psychology*, by W. Wundt, p. 451.
[3] *Grundriss der Psychologie*, p. 241.

all. It is immediate; this I could understand if it meant that it is myself I am contemplating, that there is nothing intervening between me and it. But the immediacy of consciousness abstracted from the self seems to me unintelligible. To what is it immediate? Consciousness covers a wide range of time and space, present, past, future, the near and the distant. If consciousness is confined to the present, then consciousness is one thing, experience is another. Experience is a unity. But how? All my experience is mine: I am its unifying centre and principle. Apart from this I can discern no unity. The words coherence and connection are nothing but names. A *name* is a vocal sound, a written sign: as such it has its existence; but in the use of the name this vocal and visible existence is left out of sight, and the name must point to something else. Wilhelm Wundt is a name, but the name Wilhelm Wundt is nothing real apart from the man, the self, indicated thereby. So coherence and connection are nothing if there is nothing meant by the words. I can find in Wundt's explanation no trace of any cohering or binding principle or power. "That hanging together of the psychic occurrences in which the notion of consciousness for us consists is partly simultaneous, partly successive. *Simultaneously* the sum of the instantaneous occurrences is given to us in each moment as a whole, the parts of which are bound more firmly or more loosely with one another. *Successively*, however, the state given in a next moment either arises continuously out of the state present in the immediately preceding moment while certain occurrences vanish, others persist in their course, and yet others begin; or, if states of unconsciousness intervene, the newly arriving occurrences enter into relation with those which had been present earlier."[1] Experiments have led to the conclusions that from six to twelve single impressions may be within the compass of attention at one time, and that consciousness may contain from sixteen to forty.[2] Observe here the method of objective science. These occurrences are described as "*given to us*". That is the correct description according to common-sense knowledge and belief. The

[1] *Grundriss der Psychologie*, p. 245. [2] *Ibid.*, p. 250.

separate parts of a single presentation are given to the self, the conscious being, in and by whom they are made a unity. Similarly, the successive presentations are linked together by the unity of the self. But Wundt intends it quite otherwise: there is no "us" in the consciousness as he describes it, other than the sum or totality of the occurrences themselves. The coherence, the connection, of the psychic occurrences is the only reality which, when it is existing, gives rise to the feeling and idea of a self, which, however, is not there as a real entity. Look, then, at the description as a scientific description of objective fact—where is the coherence and the unity? Consciousness thus described is like a swarm of gnats or a flight of rooks—now half a dozen, now twenty or forty: but they come and go with nothing to bring them together, nothing to keep them together. Real coherence, real unity, is not there.

In another respect, also, it seems to me that Wundt's "experience" is not that of the immediately given reality. The actually real experiences are individual: Wundt's personal experience to him, yours to you, mine to me. The experience which Wundt takes as the subject-matter of analysis is not any one individual experience, but experience in general, universally-valid experience, with its regular inter-relations. This is no real, immediately given, experience, but an ideal, constructed with more or less accuracy out of a number of individual experiences. The real experiences of men and women are not universally valid and regular. They contain exaggerations and defects, illusions and errors, intellectual and moral. No doubt the objects of the physical sciences are in a sense universal. The scientific observer generalises and defines, and then reasons upon his own concepts of things, not entirely upon actual concrete facts. The method is practically useful; but it is not keeping exactly to the concrete reality. It may be impossible to avoid adopting a like method in psychology if we want to get general results. But the fact that it is adopted should be noted, because the psychologist who adopts it is not restricting his observations to the immediate actuality of the separate experiences. It should be noted, also, that this generalising and observation of regularities

or natural laws depends upon a hidden assumption—that of other selves. Unless there are other consciousnesses in some way known to me, that is, consciousnesses which can examine themselves and make trustworthy reports of the examination, this general psychology would be impossible. The psychology which professes not to recognise any self at all, is really assuming not only knowledge of the self but also that of other selves.

When and where this original immediate experience is to be found seems somewhat doubtful. Wundt speaks of it as a vanished golden age which cannot be recalled, and also as existing still in practical life.[1] It is destroyed by the advent of the reflective form of knowledge.[2] This fall from our primeval state of intellectual innocence is spoken of as something natural and unavoidable, and as having made a breach between knowledge and reality which can never be filled up: whence Kant's reference to the "thing in itself".[3] The reader will wonder whatever this fatal lapse from the original happy state can have been. It can be regarded as looking at the one experience from two points of view: the first point of view is that of psychology, which investigates the whole contents of experience in its relations to the Subject; the second is that of natural science, which considers the objects of experience in their character as thought to be independent of the Subject.[4] But this apparently natural and innocent division of territory is itself the fall from the original state of immediate experience. The division of idea and object is an act of *abstraction*, a departure from the reality. "In itself the idea is at the same time object; there are no objects which are not also ideas, or which must not be thought of in accordance with the laws governing the formation of ideas."[5] In a word, Wundt's fundamental dogma is that there are no external objects independent of our ideas: that therefore the scientific abstraction which believes in these independent objects is an error. There is nothing outside experience; and experience *contains no objects:* it consists wholly of processes and occurrences, among which ideas are for knowledge the most important. There are no objects distinct from our ideas.

[1] *System der Philosophie*, p. 88. [2] *Ibid.*, p. 89. [3] *Ibid.*, p. 91.
[4] *Grundriss der Psychologie*, p. 3. [5] *Lectures*, p. 451.

"*Our ideas are originally themselves the objects.*"[1] The first state of immediate experience is the existence of an "idea-object," which is torn asunder by reflective thought, suffers, as it were, an act of violence, and is divided into the idea and the object. Nor is there any *subject* in the original experience: both subject and object are creations of abstracting thought.[2]

I have quoted freely from Wundt's philosophy because in fact psychology and philosophy cannot be kept distinct. To criticise his fundamental dogma at length would be beyond our scope; but we must try to understand it. For this it is necessary to keep in view the common-sense way of thinking. To common-sense consciousness or conscious experience is not everything; but it is the means whereby we know all that we do know: it contains all the data, also the thinking about the data, and the judgments which result. It contains all feeling, volition, activity, as well as all knowing and all supposing. But the plain man does not think that his personal experience, nor that the experience of all men, is the whole sum of all that is. He distinguishes between conscious experience and the experienced reality. Experience is real and of the reality, but reality is larger than experience. He believes in a real world; the things which he perceives are the real things; but these real things are not only and barely just what he perceives. He is conscious that his perception does not carry with it the assurance that it is exhaustive; that it gives him perfect knowledge of everything perceived. He is, therefore, left standing face to face with the great question —*what* is the reality? He knows himself and the world sufficiently for practical purposes—but he does not know the innermost nature of self and the world, of life and death, of time and eternity.

Locke, on the ground of the supposed difference between primary and secondary qualities, came to the conclusion that we know only our ideas; that the things they represent are beyond our reach. Whether there are real material things outside us he regarded as doubtful. Kant considered that

[1] *System der Philosophie*, p. 88. [2] *Ibid.*, p. 93.

he removed this doubt. We know only phenomena; things-in-themselves exist, but we have no knowledge of their nature. At this point Wundt enters the arena. His contention is that Locke and Kant erred in assuming the existence of subject and object to be included in the originally given experience. These concepts, he holds, are of man's creation, the result of his thinking analysis—the true originally given experience does not contain them. An object of experience is simply that which is experienced; it does not require an *experiencer;* the fact that it is experienced is its actuality, its reality, its being, its nature. The division into a perceiver and a perceived is not of the essence, the real nature of the fact, but a mental abstraction. Can we find here any intelligible meaning? Wundt believes that this division into subject and object has actually taken place in human thinking; that it was unavoidable; that it is useful in the sciences; that the sciences are in some sense true knowledge; nevertheless he holds that the division is fundamentally untrue; and that we must undo it to get at the ultimate reality of things. What does he mean?

To some extent Wundt's contention that our ideas are the objects seems to be on the side of common-sense belief, and against Locke and Kant. We plain folk hold that we see and touch real men, real trees, real stones: we do not think that we touch appearances or phenomena—mere apparitions or ghosts—but the very things themselves. We do not, however, call these real things our ideas; we do not mean that our ideas *are* the things. The fact is that there is an ambiguity, a double meaning, both in the word *idea* and in the German word *Vorstellung;* moreover the two words are not exact equivalents. *Idea*, by derivation, means an image or likeness of something; but it has come to mean a thought of something with or without a mental picture of the thing. *Vorstellung* means what our psychologists call a presentation, and also a representation or idea. And while the word idea suggests mental activity, *Vorstellung* is at least capable of a passive signification; it means that which is placed before the mind, the *given*, as well as, if not rather than, that representation which the mind places before itself. Thus our English word

idea does not permit us to say our ideas are the objects, but only "our ideas are of the objects". Locke, indeed, said "our ideas are the objects," but he was introducing novel phraseology, which was a stumbling-block to his contemporaries: and the novelty did not take root in our language. But Wundt's assertion that the "*Vorstellungen* are originally themselves the objects" may be understood to mean that what is placed before our minds by our sensations of sight and touch is the objective world. *Vorstellung* is presentation. Through our senses the objects are present to us, and we perceive *them*, not ideas, images, or copies of the objects. I think anyone can satisfy himself by introspection that when he sees a house or an elephant he has no image or copy in his mind besides the house and the elephant which he sees outside of him. In that sense the presentations are the objects—the things themselves, not, as Kant said, only phenomena. But this assertion must be made carefully and with reservations. It does not mean that the presentation, elephant, or tree, or army, is an occurrence in consciousness, *and nothing more*. Here we must part company with Wundt. Conscious experience does not carry within itself any pretension to be everything, any assurance that outside of it is nothing. Even if we accept his assertion that in the original experience, unspoilt by analysis, the presence in consciousness of an object is itself a part of consciousness, indistinguishable in character from other parts, that fact does not prove the original experience to be true and the later developed experience false. The original experience may have been ignorant; the later experience may be knowledge. Nor can we acquiesce in the view that because in some early undeveloped consciousness the subject is not distinctly aware of itself we are to conclude that no subject is there. A *Vorstellung*, or presentation, in a conscious experience implies the presence of a conscious being, whether an organism or a mind, before which the object is placed. Therefore we must dissent from Wundt's condemnation of subject and object as improper abstractions, and hold that this is, as the older philosophers believed, an ultimate distinction, inherent in the nature of consciousness itself. Furthermore, presentation and representation are not identical; they are alike but different; both refer to the object, but in contradictory ways. In the presentation, the object *is* perceived as *present;* in representation, the object *is not* perceived, but is thought of as *absent.* According to Wundt, presentation and representation are essentially of the same character: both are *Vorstellungen.* Men in general account the two as essentially different: the one is reality, the other is imagination (ideation). At one time a lover clasps his beloved in his arms; at another he remembers the moment of happiness. Is there no radical difference between the actual occurrence and the memory of it? A dying traveller has an idea or mental image of water; will that *Vorstellung* save his life? If we take the view that presentations are the objects—more accurately, are the mind's contact with the objects—we must maintain that representations are not the objects; they are subjective thoughts, not objective things.

We are compelled, then, to reject Wundt's fundamental dogma, on the ground that it is not proved by psychological analysis. If it were accepted it would make us idealists. All objective reality would be dissolved. Nothing would remain but a vague, loose, fluctuating succession of states or processes, with no permanent I or Thou, no definite This or That. It is remarkable that the objective psychological analysis can conduct to contradictory conclusions. In one man's hands it dissects from experience real objective matter; another man employs the same analysis and discovers that matter and mind are both mere abstractions, not existing in the original data at all. Both the analysts profess to work "without assumptions"; both employ the objective method of positive science; the one arrives at idealism, the other at a materialistic realism. If this difference of results does not necessarily carry with it a condemnation of the method, at least it shows us that in the present state of psychology we cannot obtain from it much help towards the solution of the philosophical problem: to which we must next turn our attention.

PART V.—PHILOSOPHY.

CHAPTER I.

A GENERAL VIEW OF PHILOSOPHY.

PHILOSOPHY is a word with a long history and many meanings. Among these meanings we find natural science, the summation of the sciences, criticism and theory of knowledge, criticism of fundamental axioms and practical wisdom. Riehl holds that "two non-homogeneous concepts" are connected under the name of philosophy[1]—"a scientific philosophy which is the self-knowledge of science, knowledge brought to the understanding of itself"[2]; and "a practical philosophy" which applies to man so far as he is "a cause in nature, a being who by his knowledge of the laws of nature can realise his purposes in nature"[3]. This is an exceptional opinion. At the present time the generally-accepted view seems to be that philosophy is a unity. Both in ancient and modern times the aim of philosophy has been to understand the universe. Science means a separate department of knowledge relating to a definite class of things; philosophy seeks to understand the whole, and for this purpose to demonstrate that the whole is one system. Unity is the key-note of philosophy. It is true that the sceptical philosophers hold that it is impossible to prove the unity: but we can include them also under our definition by describing philosophy as the *attempt* of the human intellect to understand the universe.

The philosopher comes to his task equipped with the knowledge he has acquired by common-sense and the

[1] *The Principles of the Critical Philosophy*, by Dr. A. Riehl, translated by A. Fairbanks, p. 3.

[2] *Ibid.*, p. 17.

[3] *Ibid.*, p. 22.

sciences; but without a theory of knowledge, without a clear understanding of what he means by reality. This understanding is the goal towards which he strives. He approaches one step nearer to reality than the scient by taking as his subject-matter the whole reality, and not one of its parts only. In other respects he still maintains the mental attitude of the scient. He abides by the current definition of knowledge as thinking in agreement with reality. He thinks still as the abstract spectator to whom the universe is an objective spectacle upon which he must exercise his judging faculty. Both knowledge and the reality are to be explained by his theory of the universe (when this is achieved), and then the agreement of the knowledge with the reality is to be evident. In the meantime, however, he sets to work as he best can. Naturally a large part of philosophical work is critical. The whole field of experience is re-surveyed: terms, axioms, presuppositions, are examined over again: the processes and laws of thought are once more discussed. As he must take nothing for granted, the difficulty is to make a start. We observe that he surmounts this initial difficulty by provisionally assuming what is indispensable if he is to begin at all. The minimum seems to be (1) the data of consciousness, "the *given*"; (2) the ability to judge these data; (3) some concepts by means of which the *given* is interpreted. And usually the validity of common and scientific knowledge is tacitly assumed—subject, however, to what corrections may be necessary when the universal knowledge is acquired.

The *given* is the primary assertion "something is or happens". This, by reflection, becomes the self or mind and its objects. The subject or mind is regarded as possessing or manifesting three principal qualities, thinking, feeling, will, and inasmuch as the philosopher must not set out with a dogmatic assertion of the mind as a real being, these three phenomena take its place. Objects, again, may be regarded as phenomena or as realities. Besides the *given* as thus phenomenally present in or to consciousness, some philosophers also recognise as in some way given, a knowledge or an awareness of the existence of "the unconscious". The term is badly chosen; and I suggest that we should rather

speak of the "unperceived" or "unmanifested". In the nature of the case "unconscious" has no positive meaning; it denotes only a (supposed) absence of consciousness. In this sense unconscious things, such as stones and trees, are among the objects of consciousness. What the philosopher means or should mean by "the unconscious" is that which does not in any way appear in consciousness but is believed to exist. By calling this "the unperceived" we avoid making that assertion as to its nature which is implied by the term "unconscious". The nature of consciousness produces belief in an unperceived being. Our present consciousness lasts only for a brief time, covers only a small space. All the past, all the remote, is out of immediate consciousness. There is no reason whatever for supposing that *my* consciousness, present and past, covers all that is, nor that all human consciousnesses put together cover or have covered the whole sphere of real being. There are evident reasons for believing the contrary. No human mind has ever been conscious of the interior of our globe, below the depth of a few miles; yet there is an interior. The "unperceived," then, may rationally be regarded as indirectly *given*. The data, then, are intellect, feeling, volition, objects, changes, the unperceived. The aim of philosophy being to arrive at unity, one or another of these data is taken as the fundamental reality; and the philosopher endeavours to reduce all the rest to this one, or to deduce the whole from this one: hence we have idealism, materialism, Schopenhauer's reduction of everything to will, Hegel's hypostasis of logic, Spencer's theory of evolution, von Hartmann's philosophy of "the unconscious," Wundt's philosophy of "experience," etc.

But "unity" alone is not found sufficient as a fundamental conception; bare "unity" is an abstract term, empty of meaning. Hence philosophy employs other concepts: the principal of these appear to be *being*, *change*, *end* and *causality:* under these we may place other homogeneous concepts. Being, or substance, or existence, or reality is a fundamental conception. It is the universal object of all thinking, and thinking itself implies a permanent being who thinks. The term substance signifies that this being is not

wholly manifested at any one time or by any one quality, that in fact there is something of an unperceived nature in it beneath all its known "properties". Existence expresses "being" with perhaps a note of objectivity. Reality is an assertion of the certainty of being. The four terms are synonyms for the one whole of which we think, or try to think. Unity suggests a whole and parts which together constitute the one whole; also the mutual fitness, congruity, consistency of these parts. Change, or happening, expresses our experience of successive differences, which we try to explain by showing that they are links in a chain of causation, or results of volition of one permanent being. The notion of *end* includes meaning, order, design, and excludes chance and chaos. Some philosophers have endeavoured to perform their work without the recognition of *end;* but by its rejection they seem to be thrown back upon the irrational concepts, chance and chaos—sorry material to work with. Causality has its related notions—energy or force, direction, guidance, control, necessity. The discussion of the meaning of all these abstract terms is arduous and apparently interminable. Yet without employing these five conceptions, *being*, *unity*, *change*, *end*, *causality*, or some modifications of them, the philosopher cannot proceed. Hence the necessity of a preliminary criticism.

Our reason for entering upon a survey of philosophy is this. We are engaged in an investigation of knowledge; we are bound to ask—Is philosophy knowledge? Or, does it contain some knowledge of a kind different from that of the sciences? Moreover we observe that our own inquiry into the nature and grounds of knowledge is one of the branches into which philosophy has been divided. Manifestly we are bound to examine philosophy; so far as to ascertain what light it can throw on our special inquiry.

CHAPTER II.

THE DIVERSE PHILOSOPHIES.

A SLIGHT survey of the different systems of thought, called by the common name philosophy, furnishes a decisive answer to the question—Is philosophy knowledge? If there were any certain knowledge in philosophy, all philosophers would be of one mind so far as to agree in this their certain knowledge. For universal assent is a mark of knowledge with which we cannot dispense. This does not mean that all men actually possess the knowledge, but that the knowledge is "the same for all men" who have it presented to their minds, and have sufficient intelligence and culture to understand it. In this way scientific knowledge finds general acceptance among multitudes who are unable to follow the steps by which it has been reached. In science conflicting theories and disputes about facts are common: but there is a mass of solid scientific certainty as to which all scients are agreed. In philosophy it is otherwise. The different philosophies are essentially irreconcilable; and there is no central core of truth as to which all philosophers are unanimous. This compels us to conclude—philosophy is not knowledge.

This assertion has been impugned by Hegel, who says: "The diversity and number of philosophies not only does not prejudice philosophy itself, that is to say, the possibility of a philosophy, but such a diversity is and has been absolutely necessary to the existence of a science of philosophy and is essential to it . . . The history of philosophy is a progression impelled by an inherent necessity, and one which is implicitly rational, and *a priori* determined through the Idea, and this the history of philosophy has to exemplify . . . Every philosophy has been and is still necessary. Thus

none have passed away, but all are affirmatively contained as elements in a whole."[1] To express dissent from this eminent philosopher requires some courage. But we may be emboldened by the notorious fact that the history of philosophy since Hegel laid down the pen does not verify his theory. For if all the diversities and contradictions of preceding philosophies were necessary as preliminary stages for the appearance of the perfect philosophy of the Absolute Idea and Spirit which is set forth in the doctrine of Hegel, the subsequent history of philosophy should exhibit an ever-increasing acceptance of this highest philosophy. However much we may allow for the slowness of the human intellect to apprehend new truth, we should expect to see a growing tendency to cease from disputes, a gradual convergence towards the now revealed central Idea. So far is this from being the case that perhaps the division among philosophers was never more pronounced, and the prospect of their reconciliation never seemed more remote than now. We must not rely too confidently upon this fact; for, as thousands of years were required to prepare for Hegel, so it is possible that hundreds may be needed to win that general assent to his theory which his disciples anticipate.

But to justify this anticipation there must be something in Hegel's theory which his disciples lay hold of now as the reason for their belief. And this something seems to be the Absolute Idea and Spirit, which is the culmination of the history of philosophy. It is conceivable that this theory will finally prevail; but even so, it is difficult to admit that all the diverse and contradictory philosophies will still be necessary, will still be affirmatively contained as elements in the perfect philosophy. In order to attain to this conclusion, we seem to be obliged to leave our actual point of view as thinking men, and to transfer ourselves to a point of view which for us is imaginary only, and in fact impossible. But the question arises—if this omniscient point of view could be attained, would the finite mind still *see* the diversities and contradictions which perplexed it when it

[1] *History of Philosophy*, Haldane's translation, vol. i., pp. 19, 36, 37.

abode in its own lower sphere? Let us suppose that it would still see them — and see them as diversities and contradictions which could not but arise in that lower stage of development: would the intellect exalted to the eternal height see these diversities and contradictions as *all true?* That seems incredible. Surely the loftier view would rather show that these diversities and contradictions were imperfections and falsities *in us:* a taking of part for the whole; a denying of one essential aspect of reality in order to assert another? To dogmatise in respect to an imaginary position which we cannot reach would be folly. All we can venture to say is that, in fact, philosophies have not been welded into one whole in spite of Hegel's grand theory; and at present we are obliged to consider them in their diversities.

One line of cleavage in philosophy is, for the present argument, of special significance. Philosophers may be divided into two classes: those who assert the impossibility of achieving the task of philosophy, and those who claim that they are successful in their attempts. Hegel tells us —"Sextus Empiricus distinguishes three philosophies: He who seeks an object must either find it, or deny that it can be found, or persevere in the search. Now the same holds good with philosophic investigators: some assert that they have found the truth; others deny that it can be grasped; a third set are still engaged in the search. The first, like Aristotle, Epicurus, the Stoics and others, are the so-called Dogmatists; those who assert incomprehensibility are the [New] Academicians; the Sceptics still continue to seek. Hence there are three philosophies, the Dogmatic, the Academic and the Sceptical."[1] In the present day we cannot distinguish three classes of philosophers. Our Sceptics correspond to the later Academicians: they style themselves Agnostics, not as those who confess ignorance but still seek hopefully for some solution of the great enigma, but professing to have ascertained that the solution is impossible. We have, then, two classes of philosophers: those who propound some theory of the universe, and those who assert

[1] Hegel's *History*, vol. ii., p. 338.

that no such theory can be framed by the human intellect. We might, perhaps, still maintain a threefold division by putting into a third class those philosophers who, while they admit the insolubility of the great mystery of reality, were, or are still, labouring to set up some system which shall wear an aspect of universality by taking in all "positive" or "scientific" knowledge, and exhibiting this as united by some one combining concept. Comte and Spencer would be leaders in this third class. The former satisfied himself that the metaphysical stage of the human mind had passed, or was passing away. There would be no more philosophy of the old type which sought to understand, or at least to frame a theory of the universe. Philosophy was dying, was as good as dead: but the word was a grand one, and he resolved to use it as a name for his general system of the sciences. Herbert Spencer followed his example with the "Synthetic Philosophy". The course of history, however, has not fulfilled the expectation of Comte and Spencer. Philosophy has refused to accept a unification of the sciences, and a mechanical theory of things in general, as a substitute for its higher aim. We are obliged, therefore, if we retain the definition of philosophy, to deny to Comte and Spencer the title of philosophers, or else to include them among the sceptics, on the ground of their agnosticism. Even their agnosticism, however, can hardly be called philosophy, because they do not fairly attack the great problem, but neglect it under the pretext that it grows obsolete and will die out of itself. The great sceptical philosophers of the modern world are Hume and Kant. If the inevitable insolubility of the world-problem has been proved, it is by the works of these two men, chiefly by Kant. This proof, if it is logically demonstrative, gives us at least important negative knowledge: it shows that the problem cannot be solved; and so far brings to light the fixed limits of human knowledge. And this would be knowledge of knowledge, and that of no mean value: on this account it must receive notice.

CHAPTER III.

SCEPTICAL PHILOSOPHY.

OF these two great sceptical teachers, Hume has been execrated as an enemy, Kant is extolled as a bulwark of religion. No doubt the sympathies and tendencies of the two men to some extent justify this popular estimate of them. But it is an error to suppose that philosophical scepticism is necessarily opposed to religious faith. For a practical proof of this we can adduce Kant himself as an example. He tells us: "I had to remove *knowledge* in order to make room for *belief*". And again, "Thus, and thus alone, can the very root be cut off of *materialism*, *fatalism*, *atheism*, *free-thinking*, *unbelief*, *fanaticism* and *superstition*, which may become universally injurious; and finally of *idealism* and *scepticism* also, which are dangerous rather to the schools, and can scarcely ever penetrate to the public"[1]. By "scepticism" here Kant means, of course, *religious* scepticism; as by "idealism" he means the kind of idealism with which he does not agree. Whether Kant has succeeded or not, his intention was to prove that by the use of pure reason alone man cannot *know* anything outside the range of experience; and that therefore morality and religion have full justification in their appeals to faith, against which, he shows, human reason cannot raise one single valid objection. Even Hume, though not so deeply earnest as Kant, was not as a philosopher hostile to religion. He was too acute and clear-headed to be a dogmatic atheist or anti-religious: for according to his philosophy, nothing outside mathematics can be *known;* and religion has as good a basis as physical science. Kant, though a profoundly religious man, frankly

[1] Kant's *Critique of Pure Reason*, Max Müller's translation, vol. i., pp. 380 and 383.

endorses Hume's scepticism. The lukewarm friend, or, if you think so, the covert enemy of religion, and its sincere believer being philosophical allies, it is clear that philosophical scepticism by no means necessarily carries with it religious unbelief. Indeed, if one apprehends what philosophical scepticism or agnosticism really means, it is evident that *this* agnosticism is an essential element of the Christian religion. For philosophical scepticism is the assertion that the finite intellect of man is incapable of forming an adequate conception of the Infinite and Eternal God. In this sense Christianity is agnostic. There is, then, no reason for approaching the sceptical philosophy with prejudice on either side. If, in dislike to religion, we look towards sceptical philosophy in the hope of finding there some justification for our dislike, we shall be disappointed. If, in zeal for religion, we are averse to sceptical philosophy, that aversion is founded on a misunderstanding. The philosophy itself is unbiassed; and its truth or falsehood has to be determined on its own merits.

Hume was a link in the chain from Locke to Kant. Locke confined knowledge to ideas. To the questions—What do we know? What can we know? he replied: intuitively and logically, only our ideas and their connections; inferentially, we know God: the external world we know, at best, dimly, perhaps not at all. Berkeley removed the weak places of this theory. According to him, we do not know the external world, because there really is no material world. Only God and human spirits are real. Then came Hume. Agreeing that knowledge is only of ideas, he held that ideas are only copies, faint and therefore less reliable, of our *impressions* (sensations and mental states). The human soul he could not find among his ideas; he had no *impression* from which to copy it. The Deity was altogether outside the range of his impressions and ideas. What, then, can and do men *know?* The self is unknown: the world is unknown: God is unknown. In fact we know and can know nothing but mathematics, abstract truths of number and quantity.

The practical absurdity of this scepticism was as patent to Hume as to the most stolid of common-sense folk. His keen wit found pleasure in proving that this and this only

is the logical outcome from Locke's premises, and at the same time in mocking at himself who could not practically believe his own scepticism, and at his duller fellow-creatures who could not even perceive that this scepticism is logically necessary. To this conclusion he saw strict logical reasoning from the accepted premises brings us inevitably; but, of course, we cannot believe it, only unfortunately we are equally unable to believe anything else. Therefore, in his case, speculative philosophy ends in total scepticism—the abstractions of mathematics not counting as realities. Our senses are fallible; the instinctive belief in a real external world is not rational. "It is a question of fact whether the perceptions of the senses be produced by external objects resembling them. How shall this question be determined? By experience surely, as all other questions of a like nature. But here experience is and must be entirely silent. The mind has never anything present to it but the perceptions, and cannot possibly reach any experience of their connection with objects. The supposition of such a connection is, therefore, without any foundation in reasoning."[1] Hume follows this up by arguing from the universal agreement that "all the sensible qualities of objects, such as hard, soft, hot, cold, white, black, etc., are merely secondary"; to the like nature of the supposed primary qualities of objects; and sums up in these words: "Thus the first philosophical objection to the evidence of sense, or to the opinion of external existence, consists in this, that such an opinion, if rested on natural instinct, is contrary to reason; and, if referred to reason, is contrary to natural instinct, and at the same time carries no rational evidence with it to convince an impartial inquirer. The second objection goes farther, and represents this opinion as contrary to reason—at least, if it be a principle of reason, that all sensible qualities are in the mind, not in the object. Bereave matter of all its intelligible qualities, both primary and secondary, you in a manner annihilate it, and leave only a certain, unknown, inexplicable *nothing* as the cause of our perceptions; a notion so imperfect that no sceptic will think

[1] *Inquiry concerning the Human Understanding*, sec. xii.

it worth while to contend against it."[1] The soul, the external world, God, these are outside experience. The scient may think that Hume still leaves to him the whole field of experience as the realm of knowledge. On the contrary, Hume asserts that experience cannot give rational and certain knowledge; for all reasonings concerning matter of fact seem to be founded on the relation of *Cause and Effect*. And this relation is not intelligible; it is no better than the belief of the vulgar, founded upon *custom*. Experience refers only to the past, is no rational ground for inference concerning the future. "While we cannot give a satisfactory reason why we believe, after a thousand experiments, that a stone will fall or fire burn, can we ever satisfy ourselves concerning any determination which we may form with regard to the origin of worlds, and the situation of nature, from and to eternity?"[2] I have quoted Hume at some length, because it does not seem to be generally known that Hume's philosophical scepticism extends to the physical and biological sciences: as, in fact, it does. Setting aside mathematics, "all other inquiries of men regard only matter of fact and existence; and these are evidently incapable of demonstration. Whatever *is* may *not be* . . . If we reason *a priori*, anything may be able to produce anything. The falling of a pebble may, for aught we know, extinguish the sun, or the wish of a man control the planets in their orbits."[3] The ancient maxim, *Ex nihilo, nihil fit*, Hume excludes from the sceptical philosophy.[4] Thus all the presuppositions of science—the uniformity of nature, the universality of causation, the persistence of matter and force—are swept away. Physics and biology are deprived of rational basis: outside of mathematics we have no certain knowledge. I can imagine the scient who has not studied philosophy finding this almost incredible. Hume could not have been such a fool, he may ejaculate. But Hume was no fool: he was an acute and resolute logical reasoner on data which were generally accepted in his day, and which are accepted by some scients still. If they reject Hume's conclusions, they are bound to admit either the faultiness or

[1] *Loc. cit.*
[2] *Ibid.*, part iii., sec. xii.
[3] *Loc. cit.*
[4] See his note *Q*.

the insufficiency of his premises. Kant discerned the truth of the situation. Hume's logic was invulnerable: the only possible hope of escape from universal scepticism was by way of a renewed examination of the data.

Kant, as he himself humbly acknowledges, was sadly lacking in the faculty of lucid expression. His laboured argument cannot be condensed into a few sentences, and I must confine myself to an indication of the points where he diverged from Hume, and of the extent to which he agreed with his conclusion. In the constitution of the human mind, operating upon the given sensuous experience, Kant discerned a sufficient rational basis for "the secure method of a science". Knowledge, according to him, is not confined to mathematics; it goes deeper than this; it reaches to the forms of thought which are discovered in the nature of the mind itself; it extends beyond this, to the given contents of experience when these have been moulded according to the natural laws of mind. In this manner Kant restored the validity of what is certain in common knowledge and the sciences, or, at least, he believed that he had accomplished this restoration. But at the same time he did not dissociate himself from Hume's philosophical scepticism. He harmonises his system of thought with Hume's by his distinction between *phenomena* and *things-in-themselves*. Things as they are in themselves he agrees with Hume that we do not and cannot know. Things as we know them are *phenomena*, appearances *to us*, happening in the *a priori* forms of space and time. All the knowledge of experience is phenomenal, not real. The knowledge of pure reason which is the only *a priori*, and therefore the only demonstrative knowledge, is confined to the *forms* of thought; the matter or content of thought comes from experience only. This content however is phenomenal, and as such is subject to the categories. By placing *causality* among these categories, Kant secured to the sciences the right and ability to infer the future from the past. "Everything that happens (begins to be) presupposes something on which it follows *according to a rule*." Causation is not mere sequence; it is not disorderly or chance sequence, but regular and rational sequence. Similarly, substances are rationally connected by their "reciprocity". From the "reciprocity of the manifold," that is, the mutual connection and interaction of things, the unity of the universe is a deduction. By these considerations Kant saves the sciences from the total chaos and universal unreason into which Hume had plunged the world. But all this, be it noted, so far only as the *phenomenal* world is concerned. The phenomenal world is interpreted by the understanding according to the categories, unity, causality, etc., but the understanding is subordinate to, and dependent upon, pure reason, to which it owes its possession of the categories. In a word, pure reason determines the laws of thought, teaches us how we must think; although it can never give us objects to think about. These objects are given to us in experience, and are therefore phenominal, and do not reach ultimate certainty.

Kant, then, is quite clear that speculative philosophy is incapable of solving the ultimate problems. At the close of his great work he asserts—"No one will be able to boast again that he *knows* that there is a God and a future life. . . . No, that conviction is not a *logical* but a *moral* certainty. . . . What I really mean is that the belief in a God and in another world is so interwoven with my moral sentiment that there is as little danger of my losing the latter as there is any fear lest I should ever be deprived of the former."[1]

To criticise Kant's *Critique* is beyond our scope. It has been pointed out that Kant's other works — that on the *Practical Reason* especially — should be combined with his *Critique of Pure Reason* if we would form a just estimate of his philosophy as a whole. But, in spite of all his obscurities, Kant's conclusion as to *speculative* philosophy is not matter of doubt; and what has been said above will stand. Whether Kant's sceptical conclusion is right or not is another question —not to be discussed here. We are, at present, only noting that one of the greatest, if not the greatest, of modern philosophers maintains by a solid array of arguments that speculative philosophy necessarily leads to a sceptical conclusion. But let us bear in mind what a sceptical conclusion of philosophy means. It does not mean moral scepticism: it

[1] Max Müller's translation, vol. ii., p. 711.

does not mean religious scepticism; in Kant's case it does not mean scientific scepticism; it means simply and solely that the human intellect cannot solve the ultimate problem of the universe; or, in other words, it ends in the conclusion that philosophy has discovered a proof of the impossibility of such a solution.

The existence of a class of sceptical philosophers proves that philosophy lacks the mark of universal assent, and hence that philosophy is not knowledge so long as we abide by the usual definition of knowledge. But Kant has a further interest for us. His work bears upon our inquiry into the nature of knowledge; he lays down a limit within which man can know—beyond which he cannot know. Knowledge is confined to experience. Now, it is highly important to ascertain what he means by knowledge, and what he means by experience. If he anywhere gives definitions of these terms I am unable to find them, and it would be over-bold to construct them for him. But his book leaves upon the mind a general impression that by "experience" Kant meant something less than is now generally understood by the term. Certainly he places all *a priori* truth outside experience. With him experience seems to mean the totality of sensible phenomena. Transcendental, that is, *a priori* principles "cannot be derived from experience, because experience could not impart to them absolute universality nor apodeictic certainty".[1] The term "pure" in pure reason, pure intuition, pure understanding, means just this—"not derived from experience". Thus the natural constitution of the mind itself, its laws and modes of operation, are regarded as *given* anterior to any experience, although they do not come to light until after long use in experience. At the present day what is thus known to exist by means of experience is generally regarded as belonging to experience. The sensational school of philosophers and psychologists consider the constitution and laws of mind as products of experience. If Kant's perception of the facts is the true view, it is by means of this that he saves scientific knowledge from the utter

[1] Max Müller's translation, vol. ii., p. 27.

scepticism to which Hume reduced it. But on the other hand, the fact that *a priori* knowledge only comes to light by means of experience is important; and does away with, or at least mitigates, that sharp antagonism between *a priori* knowledge and phenomenal knowledge, which is so serious a difficulty in Kant's system.

By *knowledge* Kant means necessary and certain truth. Knowledge is confined to experience; yet experience cannot give knowledge. "Experience may teach us what is, but never that it cannot be otherwise. Empirical arguments therefore cannot produce an apodeictic proof."[1] Mathematics, and to some extent physics, contain knowledge; the natural sciences fall short of this.[2] Knowledge, then, in the strict and true (Kantian) meaning of the word is (1) wholly abstract and (2) confined to the pure forms of thinking, namely, space and time, the categories or pure concepts of the understanding, certain axioms, analogies, and postulates. All this knowledge, however, is mere blank form of knowledge, empty until experience puts some contents into it. And the only kind of experience which gives, by help of the categories, demonstrative, and therefore certain knowledge, is mathematical intuition; and in an inferior manner, physical science. This seems a sorry return for so much and so severe mental labour. The salvage out of the shipwreck to which Hume's pilotage brought common and scientific knowledge is not great in amount, if precious in quality. It appeared to us in our previous examination of it, that abstract knowledge must certainly be somehow defective, that it is not a perfect image of the reality. According to Kant, only abstract knowledge is true and certain; but it must be so perfectly pure an abstraction that the least admixture of concrete experience vitiates it, makes it no longer knowledge. And Kant's theory of knowledge, we must remember, is based upon Locke's fundamental assertion that knowledge is only the agreement or disagreement of our ideas—that we have no immediate mental contact with real things.

One question remains. Kant reasons closely and cogently,

[1] Max Müller's translation, vol. ii., p. 629. [2] *Ibid.*, vol. i., p. 366.

if not convincingly. But what is his basis? What are his primitive data? In two respects he improved upon his predecessors. Instead of Locke's "simple ideas," and Hume's "impressions," as the original data, Kant speaks of "a manifold" of experience. This is a much nearer approximation to the actuality of consciousness. Next, and this is a still greater improvement, instead of "the sheet of white paper," the mere vacant possibility of sensation, to Kant the mind is a complex organism, a thinking machine, constructed for its work, and turning out results according to prescribed patterns. In the place of Hume's mere series of perceptions he sets a transcendental "ego," fitted out *a priori* with needful apparatus to produce logical results. This is a grand advance. Still the crucial question remains—on what grounds does Kant convince himself that the mind *is* what he asserts it to be? Take causality, for instance: Hume rejected it, because he found in his mind no "impressions" corresponding to *power, necessity, universality.* He retained the word "cause," but denied its meaning; reduced it to mere custom of thought; regarded it as a delusion. Kant, on the contrary, boldly proclaims causality a mental law of thought; a pure *a priori* concept of the understanding. By what authority?

Kant's reply is, in effect, this: because causality is necessary in order that experience may be possible. We have experience; we know that the principle of causality cannot be derived from experience; therefore it must be *a priori* in the mind itself. The mind brings it to experience, does not find it there. Granted; but still one point remains unexplained. How did Kant come to know and be sure that our experience is not a delusion? Hume came to the philosophical conclusion that we have no rational ground for placing confidence in our experience. Kant goes with him to this extent: he will not accept experience as giving us real and certain knowledge of things-in-themselves, but confines it to phenomena. How did he know that there is any reality behind the phenomena? Here we observe that Kant's actual starting point is not the fact of experience, nor the fact that the mind is constituted in a certain way. The second of these facts is, as we have seen, known inferentially;

the first, according to Kant, cannot give knowledge. What, then, is the datum upon which Kant actually relies? It is *the fact that we have some certain knowledge.* Because we have some certain knowledge (in mathematics, for instance), and because certain knowledge cannot be derived from experience, therefore we know that the mind is furnished *a priori* with intuitions and categories. Kant, then, has as his actual starting point and as the given basis of his whole system the same starting point and basis as that from which we set out in this investigation into the nature of knowledge. The coincidence is worth noting. In our case the assumption of the basis was made directly from observation of the fact that when men ask themselves what knowledge is they already have knowledge. Kant did not consciously begin with this basis; and nowhere plainly refers to it. Nevertheless it underlies all his reasoning.

Having discovered Kant's actual first premiss, we may still inquire—how did Kant know that this knowledge is true? And what is his justification for making a marked distinction between knowledge and belief? Kant did not take up the problem of knowledge separately and for its own sake; nor did he make a real beginning anywhere. He found psychology and philosophy in the condition to which Locke and Hume, Leibniz and Wolff had brought them; and endeavoured to heave the coach out of the ditch and set it on the road again. And he accomplished his task. There are, after all, two kinds even of sceptical philosophy. Hume's was a *sceptical* scepticism: he doubted even his own sceptical philosophy. Kant's was a *positive* scepticism: he firmly believed that he had proved his conclusions. Kant conducts the human mind to the edge of a vast abyss, and warns us not to step over. Hume throws himself over, in order to verify his assertion that the abyss is bottomless, but doubts after all whether cliff and abyss and himself are not all equally illusions.

CHAPTER IV.

DOGMATIC PHILOSOPHY.

A DOGMA is an opinion which seems, and is therefore held to be, true. In its original and proper meaning no disparagement is intended, as of groundless arbitrary opinion or of compulsion by external and unwarranted authority. When Sextus Empiricus classed Aristotle and Epicurus as dogmatists he implied no disrespect. Dogma, indeed, that which seems to be true, is much the same as axiom, that which is deemed worthy of belief, if only the meaning of the words is considered: but axiom is customarily used for a first simple and self-evident truth; whereas dogma stands for a later belief which is not immediately self-evident, but results from reflection, and rests upon grounds of reason, or upon authority for submission to which reasons can be given. Axioms are premises of knowledge: dogmas are its conclusions. Such beliefs as the uniformity of nature and the universality of causation are dogmas rather than axioms: they are not immediately self-evident, but require a long experience for their formation. In philosophy the word "theory" is more often used than dogma. Theory seems to hold a higher rank than hypothesis, but not quite to attain to certainty. Perhaps it would be correct to say that most philosophers do not propound their theories as absolutely certain truth, but propose them as possible solutions of the ultimate problem. Comte and Spencer may be called dogmatic sceptics, because it is their theory that the Infinite cannot be known—a theory based on impotence, not as with Hume and Kant on supposed proof.

Having ascertained that philosophers are divided into two classes, one of which holds as a dogma the impossibility of an intellectual solution of the problem, we are, strictly speaking,

exonerated from examination of the other. Nevertheless, in the hope that at least a side-light may be thrown upon our quest, let us pay some attention to the different philosophies which have active influence on modern thought. In order to be in a position to pass judgment upon these, it is desirable to consider beforehand the logical notion of philosophy. What must we require of a system of thought which is to be deemed a philosophy? In Kantian phrase—what is the *a priori* form of philosophy; that is, what conditions must it fulfil to entitle it to bear this name? Several important metaphysical questions are commonly called philosophical; such as, whether material things are external and real; whether time and space are external or only mental; whether causation is mere sequence or includes the ideas of force and necessity; whether the human will is free or determined. These inquiries may fairly be assigned to philosophy, but their consideration is not enough to constitute a philosophy.

In a philosophy we look for three qualities: unity, universality and consistency. A philosophy must include everything; must unite everything in one system determined by one all-embracing principle; must exhibit theoretically the essential unity subsisting at bottom throughout all the multiplicity of beings and their changes; accordingly, must be self-consistent throughout, containing no internal contradictions. Philosophy is thus necessarily monistic. If philosophic speculation leads to dualistic conclusions, these dualistic systems really conduct to the sceptical conclusion—that the problem is insoluble. They may be allowed a place in practical philosophy; but in speculative philosophy they are arguments for scepticism. A philosophy to deserve its name must present to the mind an intelligible scheme of the universe—the conception in outline, at least, of one all-embracing, self-sufficient, self-evident and self-consistent system. This ideal may seem exorbitant and impossible for the human mind, but we may not abate one jot of the demand. It is not arbitrary, but fixed for us by the laws of thought. The question is—can the human mind understand the whole of things? We have no right to stagger at the greatness of the problem. It seems to require omniscience?

Just so. And therefore, probably, the sceptics are in the right. But the dogmatists have no right to lower the standard of requirement on plea of its impossibility. They may put forth theories as guesses, as probable conceptions, as the best possible for finite beings—and under these modest appellations the theories deserve candid consideration. These concessions, however, really abandon the case to the sceptics. In the interests of truth, the ideal of philosophy must be inflexibly maintained.

The first philosophical theory which claims consideration is *Materialism.* This ancient philosophy is now dead and buried. An ardent admirer and sincere mourner has written its history and its epitaph.[1] But, although repudiated by scientific philosophers, its ghost still haunts obscure recesses of popular thought, and needs to be exorcised. Materialism has one superficial advantage. It proposes as the unifying principle of all things that which to the vulgar, and to not a few of the scientific, seems to be the most unquestionably *real* thing. The material substance of the world, with its endlessly varying qualities, properties, laws—why should it not account for everything? Does it not seem to the scient to be endowed with "the promise and potency of all life"? Materialism seems to fulfil the requirements of philosophy. It asserts that matter is the one and the all; the beginning and the end of all things; itself being uncreated and eternal; thus it offers us a system possessing unity, universality and internal consistency. Moreover, it offers an explanation of the multiplicity which arises within the unity, and of the succession of sequences, namely, motion and mechanism. The atoms of Democritus were "falling atoms". The matter of modern science is moving matter, matter moving according to the law of gravitation, matter occupying space and possessing or producing force. Thus materialism does to some extent offer a partial explanation of the order of the universe. The origin of the solar system from a nebula is explicable by this theory. Outside physics, in biology and psychology, the materialistic theory encounters insuperable difficulties. But

[1] *History of Materialism*, by Frederick Albert Lange, translated by E. C. Thomas.

these may seem to be due rather to the imperfection of our knowledge than to the necessary inadequacy of the theory itself. Having all these advantages, why should it be so summarily rejected?

Because *matter* as the universal sub-stratum and first principle of all things is a mere mental illusion. There is no such thing, or if there is, it is utterly unknown. The whole conception of materialism is the result of a confusion of thought between matter in the common-sense meaning, and matter in the scientific or philosophic sense. When plain people speak of matter they mean iron, clay, wood, water, air, hydrogen, oxygen, and a number of other things which we know by sight, touch, smell, taste, etc. Matter is thus an expression which has no reality other than these various kinds of matter; just as food is bread, or beef, or rice, or some other kind of food. The scientific or philosophic matter is an imaginary homogeneous substance which is none of the real kinds of matter, but is the hypothetical substance of which the real things are supposed to be variations. What, then, is the homogeneous matter of science? The scient does not know; he has no definition of it: it may be atoms; it may be vortex-rings in ether; it may be mathematical points acting as centres of force. In fact there are two ways of regarding matter: matter is nothing, or matter is something unknown. Matter = 0, or matter = x. Either of these may be true; and the supposition of either demolishes materialism. There is no third alternative. Now for a philosophy the unifying principle must be real, and must be intelligible. If it is not real, if there is no such thing, then the philosophy collapses: it is wholly a delusion. If it is real, but quite unknown, a mere x, the unknown cannot serve as a connecting principle by which our human minds can in thought unite things together. A philosophy is a sort of explanation; a way, at least, of conceiving the world. To say that the world is x and terms of x, leaves us just where we were before—in the presence of an unsolved problem.

There is another insurmountable objection to materialism. Matter is an *abstract* concept. The reality is consciousness *plus* something which affects consciousness, namely, matter.

Materialism expunges mind or consciousness from the given data. Its belief is that matter is the only reality: that consciousness is a complex and subtle form of matter, or a peculiar vibration or other movement of matter. Therefore in the materialistic system, mind or consciousness does not appear as a real and necessary constituent of the totality. Materialism leaves the consciousness out of sight, and concentrates attention upon matter as an independent reality altogether apart from consciousness. We certainly know nothing of such matter. The only matter we know and can conceive is that which affects consciousness. As for this matter, apart from our consciousness and thought, it may be nothing. Suppose we could get into such a position that we could see everything as it really is, it might be that we should then see that the imagined independent matter does not exist. Or we might see it as existing, and as being *immaterial*, that is, wholly unlike the matter of our present thoughts. But whatever might be, the fact is that *abstract matter*, so far as we know, does not exist: and if it does exist, it is to us an unknown x.

The antithetic form of thought which next comes before us is *Idealism*. This as a basis for philosophy is superior to materialism. At first sight the reality (thing-ness) of matter, its substantial character, its visible and tangible properties, seem to give it the advantage; but these qualities all fade away before philosophic reflection, and leave us with nothing in our hands, or only an unknown x, which for us is "as good as nothing". Idealism takes, not *ideas* in the meaning of thoughts, but mental states, states of consciousness, or perceptions as the stuff of which the universe is made. To the mind unaccustomed to philosophic thought, perceptions or consciousnesses seem unsubstantial—in quality, indeed, on a par with imaginations, only more real than imaginations, because they point to something outside themselves. Patient meditation, however, completely reverses the position. Material things may be unreal, may be nothing but our mental states —as our dreams suggest. Why should not our waking life be one continuous dream, distinguished from the broken and bizarre motley of our nightly visions, by its internal rationality

and self-consistency? So far as we can see, nothing is needed to make such an external world as we perceive in our consciousness except a human mind capable of being affected as we are affected, and some power, or person, or substance capable of affecting us in these ways. So far as we *know* this need not be substance or matter; but may be a spiritual force, a personal will, or even, as von Hartmann suggests, the "unconscious" or "unperceived". There really is no good argument against idealism; if by idealism is meant that the affections of consciousness, which we call sensations, perceptions, feelings, are the ultimate data; and that "matter" is only known, if known at all, through these. Hume said that Berkeley's arguments "admit of no answer, and produce no conviction".[1] But Berkeley's philosophy, though commonly called idealism, is not mere idealism. It is theism. Nothing is, said he, except mind: human minds and GOD: the external world being His picture-language, by which He reveals His thoughts to us. An idealism which thus rests upon theism is a philosophy which may have its difficulties, but these are quite distinct from the difficulties of idealism by itself. Berkeley's idealism is not only unanswerable, but, one may say, hardly objectionable to those who can believe his theism. Here, however, we have only to think of idealism, pure and simple, as we thought of materialism.

"States of consciousness" are the woof and the warp, the framework of the loom, the shuttle, the fingers, the body and brain—everything, in short, that makes up my world. This is the fundamental proposition of idealism. As against materialism this wins an easy victory. But now to use it philosophically—to find by its means a conception of the universe as a whole—that is the difficulty. In the first place, how shall we avoid falling into the pit of solipsism? The only states of consciousness of which I am conscious are my own. Consciousness is unique, individual, incommunicable. But I know that there are other human beings with consciousnesses of a similar type to mine. How did I get this certain knowledge? By means of this external world which is

[1] *Inquiry*, part i., sec. xii., note *N*.

common to us all. If I were the only being, it perhaps is not inconceivable that I might *dream* an external world all to myself. But on the hypothesis that I am the only being, it seems quite inconceivable that I should come to *dream* other selves besides myself. Of course inconceivability proves nothing. But here is the fact that we have the three certitudes—of self, other selves, and the external world. Idealism, as a theory, has to find room for the fact—even if by showing that part of it is illusory. The external world may be an illusion—it may be really subjective, not objective: an affection of myself and nothing more. But other selves are not affections of myself: they are not sensations, perceptions, feelings to me. They are imagined consciousnesses: and I have no sensation, no perception of any consciousness save my own. How do they get into my imagination if there is no medium of communication between us? This difficulty seems to me to make an end of idealism as a world-theory. To say with Berkeley that the external world is God's picture-language by which he speaks to us, and enables us to communicate with each other, is to introduce a *real* something which is other than our ideas, and is the cause of our ideas. The real world, which we perceive, remains there outside of us, between us and the Deity, just as it was before.

And, after all, suppose idealism were known to be true, would it suffice to make a philosophy? To me it seems that the discovery of one fundamental homogeneous material or substance of which the whole universe consists—whether it be matter, or mind-stuff, or psychic happenings, or anything else—would not go far towards the construction of a philosophy. The world is to us a whole of infinite complexity and variety; and the stuff of which it is made is comparatively unimportant. The business of philosophy is to consider all the facts as they are, in all their endless diversity, and to discern in them order, system, law, unity, necessity, and, if possible, to see the *reason* of the whole. Therefore, although idealism is superior to materialism, neither theory is of vital concern to us. The knowledge that the universe is all made of one sort of stuff, if we had it, would still leave philosophers with all their work yet to do.

Realism, for which mighty struggles have been made, is not a distinct theory of itself, with a separate concept of its own, but a mere protest against idealism which shrinks from being naked materialism. Spencer says—"This realism we are committed to is one which simply asserts objective existence as separate from, and independent of, subjective existence".[1] If this is taken absolutely, philosophy falls into dualism and vanishes. But we may take it in a common-sense way, as an assertion of our third fundamental certitude. So Riehl says realism means "that we do not perceive perceptions, but through these perceive things, which exist apart from our perceptions".[2] And he finds the ground or proof of this in the second fundamental certitude. "Because many men exist whose perceptions agree, whose feelings are complementary, whose actions work together, therefore the external world is real, therefore it has existence in itself, not merely in my idea.[3] But neither Spencer nor Riehl make any suggestion towards explaining what realness *is*. Objectivity is a relation to the subject. "Our knowledge of objects may be always relation," says Riehl, "our certainty of their existence is absolute and immediate."[4] This is strong language, but it tells us nothing beyond the fact that we have this certitude. Actually, we do so believe. What is *realness?* We saw at first that this question was unanswerable. The *real* thing is the standard to which thought must conform in order to be true: but when we seek for knowledge of these real things, apart from thought, we find none. Real things are—what we think them to be. This is the common-sense view. Real things are—unknown and unknowable, said Kant. We know only phenomena. The philosophic realists cannot extricate us from this dilemma.

One cannot help feeling amused when the philosophic realist who has expended the last grain of his powder in bombarding idealism, and in his own opinion has utterly destroyed this pernicious error, turns round upon the common-sense realist and condemns him also. This crude, uncritical realism of the vulgar is all wrong, he tells us. It must be cleared out of the

[1] *Psychology*, xv., xix, p. 472.
[2] *Metaphysics*, translated by Fairbanks, p. 164.
[3] *Ibid.*, p. 163.
[4] *Ibid.*, p. 165.

way to make room for the reception of the "transfigured" or "critical" realism of the philosopher. The doctrine of transfigured realism is that the mind is a distorting mirror which reflects things falsely. Consequently the cognition of the object is "entirely relative". Thus realism falls back into the phenomenalism of Kant. Riehl holds that uncritical realism "is in error in assuming that the external world exists outside of and before perception in the character in which it is perceived; it is wrong in assuming that things and perceptions must be alike"[1]. If I understand this aright, it is again an acceptance of Kant's agnosticism. Real things exist, and perceptions in the mind exist: but the perceptions are not like the things, and all we know about the things is that they exist, and that they are unlike our perceptions of them. This, then, is the end. Materialism is abandoned: idealism is asserted to be destroyed by a triumphant realism: and realism is—blind faith in we know not what, or utter nescience. Realism, then, cannot contribute any positive help towards the formation of a philosophy.

[1] *Metaphysics*, translated by Fairbanks, p. 164.

CHAPTER V.

DOGMATIC PHILOSOPHERS.

I. HEGEL.

STRICTLY speaking, we have not as yet considered any philosophy. Materialism, idealism, realism are not philosophies, but theories of the *substance* of the universe. If now it be supposed that the substance or stuff of which the universe is composed is known as one, homogeneous, and having some definite intelligible nature, that knowledge would give a kind of unity to all things, but it would fall short of a philosophy. For a philosophy has to furnish also a theory of movement, change, diversity, multiplicity; it must conceive the emanation, or development, or creation of the infinite variety of the world out of this one homogeneous substance. Something of the nature of force, cause, law, must be discovered, which shall suffice to bring the many out of the one. Thus far no philosophy has been named. In the series from Locke to Kant we have philosophising, but not philosophy. Locke and Berkeley were theists and christians. They accepted their theory of the whole from religion; and religion is not a purely abstract intellectual conception of the universe. Locke wrote *An Essay on the Human Understanding;* Berkeley followed with his treatise *Of the Principles of Human Knowledge.* Such works belong to philosophy as prolegomena, or as sub-divisions of a philosophy, if a philosophy is in existence: but of themselves do not constitute a philosophy. Hume and Kant were critics whose criticism ended in the denial of the possibility of philosophy. For a specimen of dogmatic philosophy we might take Spinoza's pantheistic theory; but Spinoza is not to any appreciable extent a directly living influence in the

present day, and it will suffice for our purpose to come down the stream of time from Kant to Hegel, Schopenhauer and von Hartmann—the last a living man, the other two perceptibly living forces in our own generation.

Kant, at the close of his great work, concluded that there are only two questions of pure reason which have a practical interest: namely, Is there a God? Is there a future life? and believed that his criticism had proved this result—"So far as knowledge is concerned, so much is certain and clear that, with regard to these two problems, knowledge can never fall to our lot"[1]. But even he seemed to feel a faint tinge of self-distrust; for further on he says—"No one, no doubt, will be able to boast again that he *knows* that there is a God and a future life. For a man who knows that is the very man whom I have been so long in search of. As all knowledge, if it refers to an object of pure reason, can be communicated, I might hope that through his teaching my own knowledge would be increased in the most wonderful way. No, that conviction is not a *logical* but a *moral* certainty; and as it rests on subjective grounds (of the moral sentiment), I must not even say that *it is* morally certain that there is a God, etc., but that *I* am morally certain, etc."[2] These significant words imply that over and above his own intellectual insight, to which the argument of the *Critique of Pure Reason* seemed to be demonstratively certain, Kant also relied on the fact that up to his time no philosopher had arisen who could positively demonstrate those two truths which Kant declared could not be *known*. But was it utterly impossible that after Kant the long-desired philosopher might appear? Among his successors and disciples it was generally believed that Kant himself had made that possible for them, which in the age preceding Kant had not been possible. Kant was the Moses who could conduct to the border and the Pisgah-view of the promised land; his disciples strove to enact Joshua's part. Of Fichte, Schelling, and others we need not speak. Hegel and Schopenhauer only have avowed followers in England to-day.

[1] *Pure Reason*, Max Müller's translation, vol. ii., pp. 689, 691.
[2] *Ibid.*, p. 711.

Unfortunately for us Hegel is, practically, an unintelligible philosopher. Kant took it for granted that *the* philosopher would be generally intelligible. The mark of knowledge is that "it can be communicated": for knowledge is objective, *i.e.*, the same for all men. Hegel did not succeed in making his theory intelligible to his contemporaries, or, at least, did not convince them. And although his English followers have written helpful works to expound him, it cannot be said that Hegel has been made intelligible to ordinary men. And yet, because the fault may lie in our stupidity or want of attention and perseverance, we must take account of Hegel as one who may have revealed the secret to those who can understand.

A general notion of the Hegelian theory can be gained without difficulty. "The objects of philosophy," he tells us, "are upon the whole the same as those of religion. In both the object is Truth, in that supreme sense in which God and God only is the Truth."[1] "Religion is the work of self-revealing reason, and is the highest form of reason. . . . Philosophy stands on the same basis as religion, and has the same object—the universal reason existing in and for itself."[2] "The talk about the limitations of human thought is futile; to know God is the only end of religion."[3] "The final end is to think the Absolute as Mind, as the Universal, that which when the infinite bounty of the Notion in its reality freely emits its determinations from itself, wholly impresses itself upon and imparts itself to them, so that they may be indifferently outside of or in conflict with one another, but so that these totalities are one only, not alone implicitly (which would simply be our reflection), but explicitly identical, the determinations of their difference being thus explicitly merely ideal."[4] We may, then, describe Hegel's philosophy as a Christian Pantheism, in which, as the last quoted sentence shows, an attempt to make the great assertion that God is all, and is in all, rationally intelligible is included. Why, then, should Hegel's system be regarded as a philo-

[1] *The Logic*, translated by Wallace, chap. i., p. 1.
[2] *The History*, translated by Haldane, vol. i., p. 62.
[3] *Ibid.*, p. 73.
[4] *Ibid.*, p. 108.

sophy when Locke's and Berkeley's theisms have not been acknowledged as such?

Hegel's theory claims to be philosophy, because it professes to *demonstrate* the truth of Christianity. "Religion in its own sphere is to him the highest. . . . What philosophy has to do is merely this, that what religion *is* as life and experience, it teaches us to know for thought and in thought as reasonable, true and necessary; philosophy "justifies" it, "reconciles reason with religion".[1] Immediate piety does not need this assistance; so Hegel himself says, fully admitting the religious life to be completely independent of philosophic thought. But it is the human mind as a whole that "insists on knowing what there is in it"—even in the case of religion.[2] And, indeed, the student of Hegel is sometimes tempted to think that not religion but philosophy ranks highest in Hegel's theory. Instead of being a "handmaid to religion," his philosophy may be regarded as claiming rather to be the mistress, itself the culmination of all knowing and being, of which religion is the practical application. At any rate, Hegel's philosophy, if pantheistic, is distinguished from other pantheisms by its identification of the Absolute Idea with Absolute Spirit, and of the processes of thought with the movements of reality. In his *Logic* these processes and movements are set forth as identical, as inevitable, and as self-evident. Thus we may see in Hegel not only a new method of philosophy, but a new substance as its basis and material. Knowledge is being: thought is all: all is thought: God's thoughts are realities: if man can attain to think God's thoughts after Him, this is only because the spirit of God dwells in man, or rather because this spirit in man is God. So much I seem to discern of Hegel's meaning. The key, and clue, and guiding principle of his philosophy is *thought*: not the abstract thought of common-sense and the scientific understanding, but the *concrete thought*[3] of the Hegelian dialectic. This differs from "idealism" as we have hitherto understood the word. In Berkeley's idealism, for instance, matter is rejected and spiritual beings alone exist; but spirit-

[1] *Philosophy of Religion*, by Otto Pfleiderer, vol. ii., p. 114.
[2] *Ibid.* [3] *The Logic of Hegel* (Wallace), p. 24.

life is not only thinking, it is also feeling and willing. Wundt's idealism regards psychic happenings as the ultimately given. Hegel seems to exalt *thought* to the highest rank; and not to stop here, but to make *thought* the reality of being and the Supreme Being. "The Absolute Idea" is described as the "unity of the Subjective and Objective Idea. . . . This unity is consequently the absolute and all truth, the Idea which thinks itself." And the way for the human mind to arrive at knowledge of the Absolute Idea is to think it out logically in the new logical method called by Hegel "dialectic".[1]

The logic of Hegel's dialectic appears to me in places faulty and defective. Hegelians, I observe, admit that it is a partial failure, which requires to be supplemented in order to justify it to the ordinary understanding.[2] In the meantime those who cannot climb the difficult zigzag of the Hegelian dialectic, and yet are unable to expose its logical defects, may reasonably hold that this philosophy, whatever its merits may be, is not proven. It has now been before the world for generations; and it is not unanimously accepted by philosophers. This fact alone demonstrates a grave defect either in the substance or in the formal exposition of the theory. There is, however, a supplementary argument which is practically stronger than the lack of universal assent by philosophers. Hegel asserts that his philosophy is essentially identical with the Christian religion, demonstrating to the intellect the truths which the religion establishes to faith. If his proof were logically valid, Christian philosophers and apologists would eagerly avail themselves of it. The leading thinkers of the Catholic and of the Protestant churches would unite in their enthusiastic adoption of the Hegelian doctrine. Some of these would long ago have translated Hegel's peculiar terminology into the popular speech. This acceptance of Hegel by the churches does not exist. In England there is a tendency in this direction: but it is not decisive; and a merely local leaning towards the great German dog-

[1] *The Logic of Hegel* (Wallace), pp. 373, 374.
[2] Bradley's *Appearance and Reality*, p. 30. McTaggart's *Studies in the Hegelian Dialectic*, pp. 9, 24, 80, etc.

matist does not counteract the effect of the general neglect, or even rejection, of his proffered alliance by the Christian church as a whole. Under these circumstances, I think we cannot but conclude that Hegel has failed to prove his dogma.

II. SCHOPENHAUER.

Schopenhauer followed Kant so far as to accept his proof that all we know is phenomenal; but when Kant asserted that behind phenomena there are realities, things-in-themselves, Schopenhauer parted company. He utterly denied that there are any things-in-themselves behind phenomena save one. Accordingly, human knowledge in general seemed to him illusory and worthless—a mere reflection of an unsubstantial mirage. Hegel's philosophy he flung aside with scornful contempt. But one real thing-in-itself he recognised, the *will*, which he held to be the sole creative force by which all this phantasmagoria of world-process is painted upon the inner chambers of the brain: the brain itself also being a phenomenon created, like all the rest, by the will. "The will conducts the great tragedy and comedy at its own expense, and is also its own spectator. The world is just what it is, because the will, whose manifestation it is, is what it is, because it so wills. The justification of suffering is that in this phenomenon also the will asserts itself, and this assertion is justified because the will bears the suffering. Here we get a glimpse of *eternal justice* in the whole."[1] This will which produces a world of woe is the will *to live*, the tenacious striving for and clinging to life, which is the responsible cause of sun, moon and stars, of the earth and all its contents. And the only real knowledge, that is, which has the value of *truth*, is the knowledge that we ourselves by our will to live are the creators and sustainers of the whole phenomenal illusion with all its inevitable wickedness and misery.

Schopenhauer's theory has its obscure points. What is the range of power inherent in this will? The will "does not

[1] *The World as Will and Idea*, English translation, vol. i., p. 427.

change, is not in time"[1]; therefore a man "cannot resolve to be this or that, nor can he become other than he is, but he *is* once for all, and he knows in the course of experience what he is".[2] Yet the will is in itself free and omnipotent; it can renounce itself, it can change itself into the will *not to live*, and so escape from the realm of illusion and misery. "Thus the character can never partially change, but must act with the consistency of a law of nature, carry out in the particular the will which it manifests as a whole. But this whole, the character itself, may be completely suppressed or abolished through the change of knowledge referred to above. . . . In this sense, then, the old philosophical doctrine of the freedom of the will, which has been constantly contested and constantly maintained, is not without ground, and the dogma of the Church of the work of grace and the new birth is not without meaning and significance."[3] As to the condition subsequent to this change of will, Schopenhauer seems to tolerate religious dreams of "ecstasy, rapture, illumination, union with God, and so forth". "But philosophy must be satisfied with negative knowledge. No will, no idea, no world. Before us there is certainly only nothingness."[4]

In this strange exposition of the real omnipotence conjoined with the phenomenal impotence of the will, we are driven to ask—whose or what is this will? Throughout his work Schopenhauer speaks of this will as yours and mine, the individual wills of men. But this individual will is in one place reduced to a secondary rank. "We have called time and space the *principium individuationis*, because only through them and in them is multiplicity of the homogeneous possible. They are the essential forms of natural knowledge, that is, knowledge springing from the will. Therefore the will everywhere manifests itself in the multiplicity of individuals. But this multiplicity does not concern the will as thing-in-itself; only its phenomena. The will itself is present whole and undivided in every one of these, and beholds around it an innumerable repeated image of its own nature; but this nature itself, the actual real, it finds directly only in its inner self.

[1] *The World as Will and Idea*, English translation, vol. i., p. 376.
[2] *Ibid.*, p. 378. [3] *Ibid.*, pp. 521, 522. [4] *Ibid.*, pp. 530, 531.

Therefore everyone desires everything for himself, desires to possess, or at least to control, everything, and whatever opposes it, it would like to destroy."[1] Will, then, seems to be one and universal; individual wills to be phenomenal and illusory—yet that interpretation is hardly consistent with Schopenhauer's general doctrine. Will, again, is self-contradictory. It is the "will to live"; and it is also the will not to live.

As to this being a philosophy, that is, a theory of the whole, one may object that there is nowhere to be found in it a place for that something else which is hidden behind "will," and often referred to or implied in the theory. We have "a glimpse of eternal justice"; we have throughout constant reference to the necessity of natural law, according to which "will," if it is will to live, must work. Then there is that which *is* when will to live is extinguished, that of which philosophy can have only negative knowledge. It seems doubtful, therefore, whether Schopenhauer's theory can properly be called a theory of the whole—though it may be taken as a theory of all the phenomenal.

As Hegel identified his philosophy with the Christian religion, so Schopenhauer identified his with Hindu religion, although he found it partially in accord with Christian dogmas. Into that aspect of his system we shall not here enter. In one respect he is Hegel's superior, namely, in lucidity of expression; in another he falls short of the man whom he so despised. Hegel at least offers a logical demonstration of his dogma of the Absolute. That demonstration is presented in such a form that the man of plain common-sense cannot grasp it. The specialists, the logicians and philosophers, have for the most part rejected it as inconclusive; though a small body of disciples maintain its validity. Under the circumstances, Hegel's philosophy is not proven for men in general; but we are not sure that it is disproved. We are only sure that it lacks universal assent. In the case of Schopenhauer, I have not discovered that he so much as attempts to prove his dogma. His transition from *will* pure and simple to *will to live*, for instance, is made without any justification. *Will* is a notion, or concept, the root of which

[1] *The World as Will and Idea*, English translation, vol. i., p. 427.

is, of course, human volition. There may be other and higher wills than ours, as we have reason to suppose there are lower wills, namely, those of the animals. Nor are we able to assert that *will* cannot exist by itself as a substantive existence. But we do not know of any real self-existent *will* which is will and nothing else. The human will, which for us is the type of will, and apart from which we have no experience and conception of will, is one aspect of the conscious human being, and only one aspect. Abstract *will* from feeling, perception, intellect, and activity, it is then meaningless. There is no such will in the whole universe—so far as we know or can imagine. *Will*, as a solitary concept, we cannot think. As it is impossible to think *two* unless you also think *one*—because one and one are *two*: as it is impossible to think of *right* unless you think of *left*—for right and left are directions which imply each other: so it is impossible to think *will* apart from *feeling* of pleasure and pain, of good and evil, of right and wrong. Will, then, the only *will* which for us is a reality known in experience, is a part of man's living conscious existence. Life is the antecedent: will, the result. Without presupposing life, we cannot so much as imagine will.

Schopenhauer, without reason alleged, assumes that somehow, somewhere, this *will* which we only know as a phase of our life, is the *cause* of our life: that if this *will* reverses itself, the life will fall away from it, and it will become what it was before. Thus Schopenhauer is committed to the assertion of the existence of an *a priori* will. Of course, if he could make this, his first assertion, any way conceivable and credible, we should then ask, how and why did *will* as yet not embodied in *life* come to enter upon the disastrous connection? Human *will*, as we know it, cannot create an atom; this *will* created the world. That perhaps is not saying much, for in Schopenhauer's system, the world is all a false dream. Only it is a dream from which man cannot free himself by his mere will. How, then, could he produce it in the first instance?

It seems unnecessary to discuss Schopenhauer at greater length.

III. VON HARTMANN.

In the preface to the eighth edition of *The Philosophy of the Unconscious*, its author describes his book as "a synthesis of Hegelianism and Schopenhauerism". But this is not to be taken too literally. In his supplementary volume, in the preface to the tenth edition of the *Philosophy*, he maintains his independence of both these philosophers and of Kant also. There he asserts that Kant wavered between idealism and realism, taking the former as the fundamental principle of his theory of knowledge, but remaining at bottom a realist. He himself holds that the realistic instincts of Kant were correct, and rejects the subjective idealism as untenable. In Schopenhauer he finds many errors. Hegel's intellectualism, his conception of the world-principle as logical Idea, he rejects. The synthesis therefore is only of some elements of the doctrines of his predecessors. Contrary to Schopenhauer, von Hartmann agrees with Kant in the inference from phenomena to noumena; "that there is, in fact, for all observers one numerically identic real nature which lives according to independent laws, not depending upon subjective spirit and changes, and causally influences the spirit"[1]. This is, he says, the naive realism of common-sense and of science. "Transcendental realism recognises that we possess in the subjective phenomenal world only the reflection of nature in our own spirit, and we can only indirectly *infer* the constitution and changes of the one real world by the constitution and changes of the ideal contents of our consciousness. This standpoint of the theory of knowledge is not only the only tenable one; it is also at the same time the only one which is useful for the natural sciences."[2] This is von Hartmann's realism—the external world really exists independently of our consciousness, but it is immediately known by us only in our own spirit-life (Geistes-leben).

From this transcendental realism he deduces important consequences. "The usual opinion of the scients that science of nature is superior in certainty to the science of spirit, because it is the foundation of immediate experience, is by transcendental

[1] *Ergänzung's Band*, p. 21. [2] *Loc. cit.*

realism shown to be a false prejudice of the naive realism, for we now know that the one real nature with which alone science has to do is transcendent to our experience, therefore never can be the object of immediate experience. Every declaration of natural science respecting the constitution and laws of nature rests upon conclusions which it draws from spiritual experiences in reference to the external things in themselves which cause them. So far from the natural sciences as a whole being empirical in the philosophical sense, they much rather move exclusively on transcendent territory, and need the immanent experiences of the spirit only as a spring-board in order to spring out over the experiences, *i.e.*, the subjective phenomenon-world, into the world of things in themselves, which for subjective idealism is unknowable, or, strictly taken, non-existent. The sciences of the spirit, on the contrary, do not need first to forsake the sphere of immediate experience in order to attain to their own proper territory. Accordingly, empiricism is not only the foundation of the spirit-sciences in the sense that it is that of the nature-sciences, but the infallible certainty of the immediate experience actually inheres in the spirit-sciences in the sense in which it has been hitherto erroneously claimed for the nature-sciences."[1] Hence von Hartmann holds that the key to the interpretation of nature is to be found in the human spirit; that nature herself is only a medium for the intercourse of spirit, only a transition-point of the Absolute Spirit; and so the motto of his philosophy is "from the Spirit through nature to the Spirit".[2]

Going back from these later reflections to his "philosophy of the unconscious," we find that von Hartmann, like Hegel, holds the unity of all things to consist of their being manifestations of one Absolute being. But while Hegel's "Absolute" is Absolute Thought, the logical Idea or Mind, and Schopenhauer rejected Thought to enthrone Will in its stead, von Hartmann regarded the "One Absolute Subject" as "the Unconscious". The origin of this conception he finds in the unconscious ideas and unconscious volitions of the

[1] *Loc. cit.* [2] *Ibid.*, p. 28.

human spirit. He acknowledges that there is some obscurity, even something apparently paradoxical, in the notion of *unconscious* ideation and *unconscious* volition. He means by unconscious idea "the unknown cause of certain processes, outside of and yet not essentially foreign to consciousness," which receives the name of idea, because it is in common with what is known in consciousness an *ideal* content, which itself has no reality, but can at most resemble an external reality in the ideal image.[1] I do not easily apprehend this. That there is much in the mind of which we are not immediately conscious is proved by the nature of memory and of knowledge. Perhaps what von Hartmann meant may be illustrated by the naive realism of common-sense. We all of us, before we were in any degree infected by the influence of metaphysics, were naive realists: we believed that there is a real world; but we were not conscious of that belief, because never had the possibility of any other mental attitude towards phenomena occurred to the mind. Unconscious volition he regards as clearer than unconscious idea; and this he does not try to explain. This, as a fact, is plain enough. In running away from danger, we will to escape: that volition is conscious, but the volition which sets the legs in motion we are not conscious of; and such unconscious volitions are innumerable. However, these two somewhat obscure mental facts, unconscious idea and unconscious will, von Hartmann combines into one, and calls the combination "the unconscious". And the last step is to unite all the individual "unconscious" into one totality. "All unconscious operations spring from *one same subject*, which has only its phenomenal revelation in several individuals, so that 'the Unconscious' signifies this One Absolute Subject."[2]

The ambiguities we observed in Schopenhauer between the will which is "will to live," and yet can renounce will to live and become its opposite, and again between the many individual wills and the one universal Will, are all reproduced here. Besides unconscious will there is conscious will, and the connection between the two, or the transition from one to

[1] *Philosophy of the Unconscious*, Coupland's translation, p. 4.
[2] *Ibid.*, p. 5.

the other, is not explained. And we have in addition the duality of will and idea, with no theory of the union of these diversities. Moreover, there arises the question whether the phrase "the Unconscious" has any meaning at all? It is the negation of an idea, not a positive idea. In the process by which von Hartmann arrives at "the unconscious," it is clear that this word is an abstraction from the concept of mind or spirit, which is known, so far as we know it, in and by its consciousness. So, in fact, von Hartmann (perhaps *unconsciously*) personifies his "the Unconscious"; makes it a "subject," that is, a spiritual being: and as such he represents it as never falling ill, never growing weary, never doubting, never erring, as supremely wise, and the author of the best possible world: and yet the world is bad at the best, and "owes its origin to an irrational act" of the Unconscious.[1] And so he concludes—"We understand, further, that this unconscious spirit must be the common bond of the world, and the support of the unity of the creative plan prevailing in it; nay, that it must altogether be the indivisible metaphysical essence, as whose objective phenomena the only apparently separated natural individuals are to be regarded. Thus before our searching glance the principles "Unconscious Will" and "Unconscious Idea" coalesced to form the one universal spiritual world-essence, which the dark impulse of mankind has always sought by the most diverse paths and denoted by the most diverse names, but yet everywhere at a certain stage of culture has comprehended as *spirit*."[2] So this philosophy ends as obscurely as it began.

These three philosophers—all great thinkers, endowed with the rare ability of taking world-wide views—differ widely in their conclusions. The sceptic and the dogmatist are flatly contradictory. The dogmatists seem to be hopelessly discordant among themselves. They vary from absolute optimism to the profoundest pessimism. One finds the solution of the world-problem in Infinite Reason—another in evil Will—the third in blind Unconsciousness. What Hegel would make of

[1] *Philosophy of the Unconscious*, Coupland's translation, vol. ii., p. 367.
[2] *Ibid.*, vol. iii., pp. 144, 145.

this, if he had now to continue his history, it is hard to guess. Are Schopenhauer and von Hartmann the next necessary steps to Hegel in the evolution of the perfect philosophy? At any rate—to us plain men it is clear enough that the philosophers do not agree—therefore have no knowledge.

CHAPTER VI.

LOGIC AS PHILOSOPHY.

DOES logic by itself alone give us any knowledge? To some extent, yes. The fact that the human mind can reason, that all minds reason in one way, is itself a piece of knowledge of no mean value. It indicates a natural appetite and capacity for truth. So far, logic gives us knowledge. Beyond this, logic—according to the old opinion—teaches us nothing. Logic is a science of the empty forms of thought: a mill which works truly and turns out right results, but which cannot work until something is given to it to grind. Until we have premises, data, our reasoning power cannot effect anything.

The new logic spurns this limitation. It claims to be itself a source of knowledge: it uses the laws of thought not only as rules for thinking, but as data of knowledge which can be the basis of philosophy. The logical law, taken as a postulate or axiom, is declared to be, or to give us, knowledge of reality. This assumption is extended to the utmost extreme. The logician asserts that the law of Identity "ultimately asserts the thorough-going unity of Reality": the law of Contradiction asserts that it is "a consistent unity": excluded Middle proves it to be "a system of reciprocally determinate parts": Sufficient Reason shows that every part has its "ground". Reality here means the Infinite Whole, the Absolute. This is nothing less than a claim to solve the enigma of the universe by means of logic alone, using it at once as the foundation and the instrument of knowledge. In this respect it is Hegel's logic over again; only now it appears not in Hegel's dialectic form, but in the form of the old logic.

The question whether the laws of thought give us any

knowledge of things will be best considered apart from any particular use which may be made of the alleged knowledge. It is a question of fact. The laws of thought are known. It is said that they give us knowledge. How shall we test this affirmation? We cannot do better than apply the laws to our common everyday experience, and observe their operation. The claim that they give knowledge of the Infinite Reality is not easily brought to a test: for we do not profess to *know* the infinite. Let us for the present leave that altogether out of sight, and try to see whether in ordinary affairs we derive knowledge from logical laws.

What is called the law of Identity is our mental judgment that something is "the same" or is "similar". It is the general form of all ordinary positive judgments; such as "that is an orange"; "that is my umbrella"; "iron is a heavy metal"; "Victoria is Queen of England". We do affirm things to be the same, or of the same class. These judgments are our knowledge, and are knowledge of real persons and things. The question before us is this—does the logical law alone give us the knowledge? We have no difficulty in replying. Logic could do nothing for us without the data of consciousness upon which it works. The orange is not one of a class called oranges, and like others of the class, round, yellow, soft, juicy, etc., *because* we assert "that is an orange". On the contrary, the facts come first, the sensations of sight, feeling, taste, smell, etc., then the judgment follows. The logical "law" is merely a way of saying that human minds do judge in this manner, do assert sameness of individuals and similarity of classes. This assertion is of real things; thus is knowledge of reality: but it is not our mental assertion which makes the things the same or similar. The sameness or similarity is in the things, and makes our judgment conform to the external fact. Such is the view of common-sense and of science. What, then, does the logical law do for us? Nothing at all. The law of Identity is a mere verbal expression to describe the character of our ordinary judgments. If we take this mental fact that we can and do identify and classify things as a part of the whole complex process which leads to knowledge, it is indispensable, and actively contributes to the result. All the consciousness might exist, all the external facts might be there, but if there were no *intelligence* there would be no knowledge. The observation that the mind cannot judge until some subject-matter is brought before it to be judged is no depreciation of the intelligence which judges.

The law of Identity may be lightly passed over, because, in fact, the whole weight of this logical philosophy is thrown upon the second law, the law of Contradiction. To this, therefore, we must devote special attention. This law of thought proclaims that of two contradictory propositions both cannot be true: one of them must be false. To this the law of Excluded Middle adds—both cannot be false, one must be true. The law of Excluded Middle, however, is not so highly esteemed, and, therefore, less stress is laid upon it. Everything, according to this third law, is painful or not painful, white or not white, ecclesiastical or not ecclesiastical; and so on, universally. Is a circle painful? No, it is not painful. But the assertion is needless. We do not want to make it; nor that a sigh is not white; nor that sugar is not ecclesiastical. Such associations of words border on the ludicrous, and have no place in a serious estimate of knowledge. Evidently the law of Excluded Middle is not equal in cogency with that of Contradiction. This declaration that two contradictory propositions cannot both be true is of an absolute character. It seems more properly a *law* than the law of Identity. For we are not obliged to make assertions: if we choose, we can be silent; if we are doubtful, we can refrain from judging. But once having uttered our verdict, we cannot, must not, affirm a contradictory judgment—unless we abandon the first. Here the mind seems to be under a double compulsion, both of a natural and of a moral law. If any law of thought is to be relied upon, surely it is this. If any law of thought can be used as a foundation of an argument, this is the one. If any law of thought gives us knowledge of real things, we shall expect this law to do so.

But, when we come to examine the case, it appears plain that the law of Contradiction alone cannot give us knowledge, does not make any pretence to give knowledge. In the first

place, it is clear that the law of Contradiction cannot come into operation by itself. It sits in judgment upon two contradictory propositions. These propositions must first come into existence. An isolated first proposition does not come under the law of Contradiction. It is not until a second proposition has been formulated which negatives the first that the law of Contradiction comes into being. If the first proposition is not contradicted by the second, nor the second by the third, still this law does not arise. Evidently there may be a considerable accumulation of knowledge, apart from any contradiction, whilst a law of Contradiction cannot be until *some* knowledge has been acquired. Hence it would appear that the law of Contradiction cannot be the origin of knowledge, nor the first principle of a system of knowledge.

Secondly, when the law of Contradiction is in operation it does not give knowledge. It merely forbids the simultaneous assertion of two propositions one of which denies the other. A is B: A is not B. We cannot assert both these propositions at once: that is all that we learn from the law of Contradiction, Which is the true assertion this law does not tell us: therefore it gives us no *knowledge*. Its value lies in its compelling us to suspend our judgment, and to seek knowledge elsewhere. If I can ascertain that A is B, then I know that A is *not* not B: but this denial of the negative is no new knowledge; it is simply the knowledge that A is B. Look at it in a concrete case. I enter a shop to buy something, and lay a shilling on the counter. The shopman rings it, refuses it, saying "that's a *bad* shilling". A *bad* coin is not a shilling. Here, then, is a contradiction. I believed the coin to be a shilling: he says it is *not* a shilling. There is no knowledge *in the contradiction.* The shopman may be right; if so, it is because he knows the marks and qualities which every good shilling possesses, and notices the absence of some of them in the coin before him. The contradiction cannot arise until a man knows something which is contradicted. For instance, a naturalist sees something which he takes to be a bit of dry twig: suddenly he observes the bit of dry twig moves: there is no wind, no perceptible cause for the movement: he begins to suspect, and on closer examination he denies that the thing is a bit of dead

wood; he asserts that it is an insect. This is a case of contradiction and of knowledge; but it is not the contradiction which makes the knowledge. First, the naturalist knew that dry wood does not move of itself. Having satisfied himself that the thing moves itself, he concludes that it is not dry wood. But what is it? He examines it, detects its joints, its structure: he knows it to be an insect. The contradiction served to wake him up out of a mistaken judgment, and to set him seeking for the true judgment. But by itself the contradiction is not knowledge, does not produce knowledge —all that it does is to call attention to the fact that in the case before me I do not know. If awareness of one's ignorance is knowledge, then the law of contradiction produces knowledge: otherwise it yields no result of knowledge.

To test this conclusion in actual cases, consider the use of the law of Contradiction by Euclid. He takes two triangles which have two sides of one respectively equal to two sides of the other, and the included angles equal: on these data he argues that the third sides are equal. For supposing that one of the triangles is taken up and laid on the other so that the equal sides shall fall on each other, they coincide, and their terminal points coincide. Therefore the lines between these points coincide: the two lines are now one and the same line: otherwise, two straight lines enclose a space. This is impossible: a *reductio ad absurdum* Euclid calls it. Thus the equality of the two triangles in all respects is proved. Is not this a case of knowledge acquired by means of the law of Contradiction? No; in the first place, it rests upon the law of the Excluded Middle. The two triangles are either equal or unequal; the supposition of their inequality being proved to lead to an impossibility, the only possible alternative is thereby proved to be true. But it rarely happens that we can make perfect definitions and know all possible alternatives. We have therefore to consider the law of Contradiction, not that of the Excluded Middle. In the present case the argument is that the two lines will be coincident or will not; but if not, seeing that their terminal points agree, they enclose a space: and it is known that two straight lines cannot enclose a space. This is a

certainty of intuition: it does not result from the law of Contradiction. Similarly, in every case, there is some knowledge prior to the contradiction, or the law cannot yield knowledge. A contradiction is between two propositions. If one of these is known to be true, then the other is known not to be true: there is no real contradiction in this case, though a contradiction may be assumed for the sake of argument. If neither of the propositions is known to be true, then the contradiction between them does not indicate which of them is true. The law of Contradiction, then, is not by itself a source of knowledge. We cannot even be sure that it shuts us up to the adoption of one of the contradictory propositions. Logically, if we divide the universe, all the actual, all the possible, into A and not-A, then everything must be either A or not-A. But in order to make this division, we require first to know all the actual and all the possible. As a matter of fact, the contradictory propositions are laid down by finite minds, and are propositions which appear to us to be contradictory. They refer to real things: but the real things are only imperfectly known by us. The contradiction may be only apparent, and may be removed by an expansion of our knowledge. Our ancestors believed that the existence of human beings living at the antipodes involved a contradiction, and was impossible and absurd. They supposed that the directions *up* and *down* are fixed, and that it is as absurd to suppose them interchangeable as that it is to suppose that two straight lines can enclose a space. If there were men at the antipodes, they argued, they would be *heads downward*, they would fall off: they could not stick to the earth, as flies stick to the ceiling.

Finally, we can challenge the production of one single item of addition to knowledge by means of the law of Contradiction alone. Take the whole mass of our present knowledge; add to it if you can one additional item by using the law of Contradiction. Is the planet Mars inhabited by human beings like ourselves? The law of Contradiction in this case seems perfectly applicable. Mars is inhabited, or Mars is not inhabited — one of the propositions surely must be true—but *which?* The astronomer does not conjure

with the law of Contradiction to find the answer. He infers that the moon is uninhabited because he can detect no signs of an atmosphere round the moon. As to Mars, he brings his telescope out, he does not employ the law of Contradiction as an instrument of research.

It seems to me, then, certain that the law of Contradiction is not an original source of knowledge; that no knowledge can be got out of *it*, use it how you will; that the knowledge which in a loose way of speaking is attributed to the law of Contradiction is really knowledge obtained independently of this law, obtained by those interpretations of the data of consciousness which are expressed according to the law of Identity. The law of Contradiction by itself is negative, and only negative. It tells us what is *not:* it never tells us what *is:* and out of nothing nothing can come.

The law of Contradiction, if not a source of knowledge, is at least a test or criterion of knowledge; it is indeed asserted to be an *absolute* criterion. To this claim of absoluteness we must demur. In order to be an absolute test, it must be universally applicable and never-failing. We can agree however so far as this: our knowledge must not contradict itself. In case we seem to know something, but find that this contradicts something else which we also seem to know, we are obliged to surrender one of the opposed judgments, or to hold ourselves in suspense between the two. This appears to be the true use of the criterion: it acts as a check to the premature acceptance of ungrounded judgments, and leads to the detection of false judgments. It is not a source of knowledge, but a preventive of error.

One thing more has to be considered: what is the relation of the law of Contradiction to the reality? All our assertions refer to the reality, it is said, and therefore the law of Contradiction refers to reality: reality must be such that it does not contradict itself. This seems to be reasonable; but we must be cautious. What is reality? At present we have no full, no final answer to this question. Common-sense did not give it, nor did the sciences. We did not find the answer in psychology, nor has any philosophy which we have noticed succeeded in satisfying us that it knows the reality. Our

knowledge, so far as it goes, refers to real things. In mathematics it refers to triangles, circles, numbers, etc., which are thoughts in human minds. In this science the thinking mind is the reality of which the thoughts are real parts. In the physical sciences the knowledge is of visible and tangible realities. Nowhere have we found any science of reality as a whole. It is difficult, then, to see how the law of Contradiction can refer to the whole reality. Of course, if we were to take two contradictory systems, such as materialism and idealism seriously, we should find that by the law of Contradiction they cannot both be true. But does that check upon the philosopher's thought indicate that in the reality there is some character or quality corresponding to the law of Contradiction? Let us look at finite cases. I assert "that is a horse": the assertion points to a living animal, a real thing. Then "that is *not* a cow". This is true—the being a horse is not being a cow: the same animal is not both horse and cow. But all knowledge of this kind belongs to the law of Identity. We know horses and cows, and other definable classes of things; we make assertions of likeness and of difference because some real things are like each other; other real things are different from each other. So far we recognise a parallelism between knowing and things known. But if I see at a distance in a dim light an animal which I say is a horse, and afterwards, seeing it again, I observe its horns and assert "no, it is a cow," is there anything in the animal corresponding to my two assertions and their contradictoriness? It seems to me that there is not. The animal being a cow always was a cow: *it* did not waver between the two—the equine and the bovine nature. Nor is the cow in nature a contradiction to the horse. So far as we can judge, there is room in infinite space for an infinite variety of beings. We look at the real things to learn what kinds there are: we do not find that our knowledge of them sets bounds to their variations. Once all swans were supposed to be white; a black swan was a contradiction. Once species were believed to be immutable, and the notion that one species can arise out of another was deemed absurd and unnatural. The theory of Evolution has reversed this judgment, and taught us not to set bounds to Nature. Nature is what it is, and becomes what it becomes; and "Nature never deceives". The law of Identity expresses man's belief in the trustworthiness of "facts" of the data of consciousness. But it does not amount to an assurance of the truth that Nature is a unity which can be personified as a Being existing and acting under a necessity of self-consistency. Anything and everything seems possible in an infinite universe. All the appearances which we call contradictions—light and darkness, heat and cold, pleasure and pain, matter and spirit, life and death—exist in the totality which we call Nature. The law of Contradiction forbids *us* to attribute contradictions to the same thing at the same time; it does not forbid us to recognise the co-existence of contradictions in the whole reality as it appears to us. It does not command nor entitle us to pronounce the whole reality a unity without internal contradictions. The whole may be a single system, harmonious within itself, reconciling all apparent discords: but the use of the criterion furnished us by the law of Contradiction does not enable us to *prove* that the whole is of this nature.

CHAPTER VII.

APPEARANCE AND REALITY.

I HAVE in my hands a book[1] which professes to give a positive knowledge of *the* Reality, and to demonstrate this by logic. That a human intellect has claimed this infinite knowledge excites a feeling of awe; its critic may well tremble as he enters upon his task; yet to accept the proof without testing it is impossible. What is offered to the intellect must be received or rejected by the intellect. And here one is staggered by the thought—what if all intellects are not alike? What if mine be incompetent to understand the proof which is offered. This fear is not removed when we read—"that metaphysics should approve itself to common-sense is indeed out of the question. For neither in its processes nor in its results can it expect, or even hope to be, generally intelligible"[2]. The standpoint of the preceding chapter, and of our inquiry throughout, is that of reflective common-sense, aware of its limitations, striving for such comprehension of science and metaphysics as it can achieve as it goes along, but often obliged to lament its deficiencies. In the present case, however, a demand is made which common-sense will be unable to fulfil. It is said here —"You are forced, willingly or not, at a certain point to assume infallibility . . . you stand on an absolute principle, and with regard to this you claim, tacitly or openly, to be infallible"[3]. We left our infallibility behind when we entered upon the study of knowledge. The young child holds that his father is infallible. The boy thinks and the uneducated man thinks himself infallible, so far as he has certain knowledge.

[1] *Appearance and Reality*: a Metaphysical Essay, by F. H. Bradley, LL.D., 1893.

[2] *Ibid.*, p. 547.

[3] *Ibid.*, p. 512.

The form of common and scientific knowledge is the categorical assertion—that A *is* B; without any tinge of hesitancy, without any recognition of possible need of modification. Practically, that is equivalent to claiming infallibility. But our inquiry as to the nature and grounds of knowledge indicates a mental awakening, and henceforth our liability to error has been the prevalent feeling—not infallibility. The metaphysical argument must produce in us the assumption of infallibility, if it can—we cannot bring it with us.

In *Appearance and Reality* the two terms indicate two divisions of the work—the first consisting of destructive criticism, the second offering and professing to prove positive knowledge of the Reality. Under the name of *appearance* the ideas by which we try to understand the universe are criticised, and it is concluded that "the world, as so understood, contradicts itself, and is therefore appearance and not reality".[1] The second part first describes the general nature or character of Reality, and then considers some of its special features. Whether it convinces us or not, no one will dispute that it is a magnificent attempt: and probably those who regard the proof proper as inconclusive, will find themselves in strong sympathy with some portions of the book, and own that even those parts from which they dissent are valuable for their suggestiveness. As in the case of Hegel's philosophy, the opinion that he has not *proved* his conclusions does not necessarily imply dissent from these conclusions; so here a student of *Appearance and Reality* may hold that Dr. Bradley has utterly failed to prove that he has or that man can have *knowledge* of the Reality, and yet may believe that the conceptions set before us in his pages are perhaps the best approximation to knowledge which the human intellect can attain. I wish carefully to guard myself against being supposed to be an antagonist to the spiritual conception of the universe which is here pourtrayed, although I shall have to state plainly that to me the logical proof seems inconclusive, and that in some respects I hold that Dr. Bradley is quite in the wrong. Within the space of a few

[1] *Appearance and Reality*, p. 11.

pages it will be impossible to do more than give a brief outline of the grounds upon which I dissent from his fundamental position.

The thesis to be proved is that man has an absolutely certain knowledge of the Reality, the Absolute, the One and the All. The proof offered is "an absolute criterion," "an absolute test"; and this absolute test itself is to furnish us with information about the reality. Of course, the whole book is indirectly an argument for the thesis; but the logical proof is condensed into a few pages,[1] even into a few sentences. Yet these sentences are expanded on either hand into such far-reaching ramifications that it is impossible to do full justice to the argument in a brief notice. The absolute criterion is the principle that the self-contradictory cannot be real. In the criticism of *appearance* this is the test by the application of which all our ordinary ideas are proved to be unreal. In the description of *reality*, the criterion is used as a source or means of information, giving positive, even absolute knowledge. In the previous chapter we tried to consider, calmly, dispassionately, without regard to consequences, whether or no the fact that we are compelled to reject one or the other of two contradictory propositions gives us any positive knowledge, and we came to the conclusion that it does not. This conclusion is vehemently controverted in the argument before us; but I cannot discover that any *proof* is given. Let us quote a paragraph which contains the core of the argument.

"Is there an absolute criterion? This question, to my mind, is answered by a second question: How otherwise should we be able to say anything at all about appearance? For through the last book, the reader will remember, we were for the most part criticising. We were judging phenomena and were condemning them, and throughout we proceeded as if the self-contradictory could not be real. But this was surely to have and to apply an absolute criterion. For consider: you can scarcely propose to be quite passive when presented with statements about reality. You can hardly take the position of admitting any and every nonsense to be truth, truth

[1] *Appearance and Reality*, pp. 135-147.

absolute and entire, at least as far as you know. For if you think at all so as to distinguish between truth and falsehood, you will find that you cannot accept open self-contradiction. Hence to think is to judge, and to judge is to criticise, and to criticise is to use a criterion of reality. And surely to doubt this would be mere blindness or confused self-deception. But if so, it is clear that in rejecting the inconsistent as appearance we are applying a positive knowledge of the ultimate nature of things. Ultimate reality is such that it does not contradict itself: here is an absolute criterion. And it is proved absolute by the fact that either in endeavouring to deny it, or even in attempting to doubt it, we tacitly assume its validity."[1]

This cataract of impassioned argument almost carries one away. Can it be that all men are blind, or victims of self-deception? Is there an absolute criterion and an absolute knowledge which we cannot deny nor doubt, even if we would, and yet we have somehow missed it all this while? One thing, at least, we can assert with a clear conscience: we have not tried "to accept open self-contradiction". The laws of logic bind us equally with other men. But we are unable to see that our inability to accept two contradictory propositions gives us any other knowledge than that both are not true. Here the fact that the application of this principle or criterion has been used to shatter into fragments the whole edifice of common and scientific knowledge is brought forward as an argument—for what? That the law of Contradiction must be applied? This is hardly in need of proof. It is brought forward to prove that "we are applying a positive knowledge of the ultimate nature of things". This seems a marvellous transformation-scene. It is as if a revolutionary mob should demolish London with crow-bar and dynamite; and having proved the efficacy of their tools by the fall of Nelson's column, the blowing up of St. Paul's, Westminster Abbey, the Houses of Parliament, and, in a word, every building in the great metropolis, should proudly offer crow-bar and dynamite as the foundation and means of a new and better city to take its place. Everything that we thought we knew

[1] *Appearance and Reality*, p. 136.

is proved to be unreal: we are left without a rag or tatter of knowledge to call our own. And in this utter destitution—lo! presto!—a wand is waved, and a few magic words give to us knowledge of the infinite, the eternal, the ultimate nature of things, the Absolute, the Deity—all that philosophers, poets and prophets of all ages have found mysteries surpassing man's power of imagination!

One could wish that the author had been able to express more definitely what he understands by "knowledge". Unfortunately for us, he has come to the settled conviction that "there can really be no such science as the theory of cognition".[1] And yet he has a strong conviction of some kind about knowledge, for throughout his destructive criticism the demand for *intelligibility*, for a clear *meaning*, is constantly recurring. "Anything the meaning of which is inconsistent and *unintelligible* is appearance and not reality."[2] In some cases the lack of intelligibility seems to be the final condemnation. In regard to the "self," for instance—"the self is in any case unintelligible . . . we cannot reach any defensible thought, any intellectual principle, by which it is possible to understand how diversity can be comprehended in unity".[3] But now turn to knowledge of the Absolute. Here we are told—"Fully to realise the existence of the Absolute is for finite beings impossible. In order thus to know we should have to be, and then *we* should not exist. This result is certain, and all attempts to avoid it are illusory. But then the whole question turns on the sense in which we are to understand 'knowing'. What is impossible is to construct absolute life in its detail, to have the specific experience in which it consists. But to gain an idea of its main features—an idea true so far as it goes, though abstract and incomplete—is a different endeavour . . . And surely no more than this is wanted for a knowledge of the Absolute."[4] In other places, indeed, absolute knowledge of the Absolute is claimed. But I can find no clear and fixed standard of knowledge set up and maintained. The Absolute,

[1] *Appearance and Reality*, p. 76. [2] *Ibid.*
[3] *Ibid.*, p. 119. [4] *Ibid.*, p. 159.

in whatever sense and to whatever degree we may know it, is certainly "unintelligible" to man: if in no other respect, assuredly in this, that the Absolute contains in itself all differences, pain and pleasure, good and evil, right and wrong, and these all harmoniously, as a unity. In the case of finite things, and especially in the case of ourselves, inability to see how diversities can unite in one being is fatal—not only to our knowledge of ourselves, but to our reality—we are unreal, mere appearances. In the case of the Absolute, this same difficulty, although it looms so infinitely larger, is not allowed to count.

The maintenance of one uniform standard of judgment is not a self-evident feature of this book. The author at times seems to glory in self-contradiction—though, no doubt, he means always to be true to his "absolute criterion". I am doubtful whether he always succeeds. The whole of his criticism of "appearance" goes to show that these appearances are *not real*. But no sooner has their destruction been thoroughly accomplished than he at once turns round and rehabilitates the appearances. "Whatever is rejected as appearance is, for that very reason, no mere nonentity. . . . For reality must own, and it cannot be less than appearance."[1] And in the end appearances are identified with reality in the closest possible manner. "All is appearance, and no appearance, or any combination of these, is the same as Reality. This is half the truth, and by itself it is a dangerous error. We must now turn at once to correct it by adding its counterpart and supplement. The Absolute *is* its appearances, it really is all and every one of them. That is the other half-truth which we have already insisted on, and which we must urge here once more."[2] So that while the basis of all our knowledge of the Absolute is the doctrine of its self-consistency, the culmination of that knowledge is that the Absolute is the Infinite self-contradiction! This, of course, is again immediately removed by the assertion—"we know the sense and the meaning in which these half-truths come together

[1] *Appearance and Reality*, p. 136. [2] *Ibid.*, p. 486.

into one. The Absolute is each appearance, and is all, but it is not any one as such. And it is not all equally, but one appearance is more real than another."[1] Although I admit the speculative courage and acumen of these high-aspiring thoughts, I, for my part, am unable to accept them as *knowledge*. The assertion is made—"Appearance without reality would be impossible, for what then would appear? And reality without appearance would be nothing, for there certainly is nothing outside appearances." Is this knowledge? Who knows this? And how does he know it?

I find this proof unconvincing in both parts. First as to *appearance:* we have no exposition of what is meant by the term. Almost at the close a sort of apology is made for this. But it seems to me that the whole work from first to last rests upon a mistaken, or at least a debatable, psychology. An appearance, I cannot but think, is an appearance *to me:* and that if the self is not duly recognised, the term appearance ought not to be used. Now it is observable that though the existence of the self in some sense is acknowledged as a fact, and in the second part the self is rated as more real than the physical world, it still remains essentially appearance not reality: if we can keep up a distinction between appearance and reality at all. And the dependence of perception upon the perceiving self has no stress laid upon it. At all events the whole treatment here of appearances seems to me defective. They seem to be regarded as facts or occurrences perceived and known by an imaginary abstract spectator who may be ignored. Yet here are the facts, the occurrences: no one disputes this: how can their existence, as mere appearances even, be intelligible except as appearances *to* a real living concrete self. Can anything appear *to an appearance?*

Dr. Bradley takes as the first example of an appearance the distinction between primary and secondary qualities of things—the solid occupation of space on the one hand, and on the other colour, smell, etc. He rejects this distinction as "unintelligible" and at bottom incorrect. I agree with him here. But I also find his distinction between appearance

[1] *Appearance and Reality*, p. 487.

and reality unintelligible and untrue. His final identification of appearance with reality seems an admission of this. In the ultimate consummation of all being in the Absolute there is no mere appearance; the whole is real. If I could hold that we have *knowledge* of the Absolute, I should assent to this dogma. But it seems to me that we have not such knowledge: that for us, in our thinking about the universe, distinctions are indispensable. The rule, I think, which we should lay down is this: any distinction which we see it necessary for us to make we must maintain until we can remove it by showing the higher unity in which it ceases to exist. The distinction between matter and mind is an example. We may imagine or believe that ultimately this distinction would vanish *if* we knew everything—but in the meantime, the mere verbal statement that mind and matter *may be* two forms of one substance, gives us no right to set the distinction aside. So in the case of appearance and reality, I think that this is a useful and valid distinction, a distinction which for us is real, and that therefore we have no right to treat it as nothing, however firmly we may believe that *if* we were omniscient we should not think this distinction as now we do. Let me give an illustration. Primitive man thought that the earth is flat, that the sky above is a solid material vault, on the upper side of which are reservoirs of water. This was to the man of those days the *appearance* of his world; and to multitudes still living that is the way in which the world appears. We know that the world is not like that. We say confidently that the earth never was that shape, that the sky never was a solid firmament. The law of Contradiction applies here. But how? Because we have a meaning for appearance, and a meaning for reality. Reality is that which *is* or exists. Existence is not a predicate which can stand by itself: everything which exists has some quality: but on the other hand everything which has reality exists. Dr Bradley's "standard is Reality in the form of self-existence"[1]. "Existence is not reality, and reality must exist."[2] We may,

[1] *Appearance and Reality*, p. 375. [2] *Ibid.*, p. 400.

then, take him as assenting to the view that for anything to be real it must at least exist. Looking on the universe in the light of astronomical knowledge, we assert that the savage's conception of a flat earth and solid sky never did exist. And yet the savage imagined that it did exist. It was the appearance of the world to him. I infer that we may rightly make a distinction between appearances *to us* and real existences. Appearances to us are our interpretations of the *given*, of the data of consciousness. Some of these interpretations may be correct: other interpretations we now know to be incorrect. It is possible that the interpretations which we now make, that even the surest conclusions of the sciences, may be somehow faulty, and such as would be altered *if* we were raised to omniscience. Thus we hold all our knowledge as relative, not as absolute. But until we are omniscient we must hold fast to our clear and necessary distinctions. And the distinction between appearance to us, or our interpretation of something given by sensations, and that which is given, the real thing, is a true distinction, which ought not to be obscured and ignored. The interpretation may be false; there may be all the difference between the appearance and the reality that there is between existence and non-existence, between *is* and *is not*. But in *Appearance and Reality* this conception of appearance is suppressed. Appearance is not *of* something *to* someone, because both selves and real things are degraded to the class of mere appearances. The class of appearances is widened to include everything, mere imaginations, positive falsehoods, and non-existences among the rest. Of course the savage's false conception of earth and sky in a sense exists: it is a thought in his mind. But it does not really exist; it does not exist *as* he exists, and as *the world* exists. We cannot dispense with the distinction between existence and nonentity, between truth and falsehood. If we do, we have no knowledge at all—and how, then, is it possible to claim knowledge of the Absolute? Dr Bradley, indeed, contends that *our* truth is not wholly true; and that if it could become wholly true, *we* should cease to be. Nevertheless, while I continue to exist, I refuse to surrender the distinctions which certainly

are true for me here and now. I admit that everything which exists at all in any sense has some place in the universal whole, and some manner of being; but I affirm that not everything *really* exists. The self has a real existence; but the imaginations, fictions, falsities, which may for a time find lodgment in a mind, have no real existence. Moreover, the self does not *appear* in the same way as objects appear to it. By levelling down everything into one class called "Appearance," it seems to me that the true meaning of the term appearance is lost, and confusion is introduced. A word which means everything comes in fact to mean nothing.

We have now to examine the centre and core of this philosophy: namely, the deduction of knowledge of the Reality from the law of Contradiction. This is perhaps not the only criterion,[1] but it is the "supreme and absolute" criterion.[2] This criterion, it is contended, gives us "real information". "Our standard denies inconsistency, and therefore asserts consistency. If we can be sure that the inconsistent is unreal, we must, logically, be just as sure that the reality is consistent."[3] Before criticising this argument, let us follow on to the end. "We may make a further advance. We saw (in the preceding chapter) that all appearance must belong to reality. For what appears is, and whatever is cannot fall outside the real. And we may now combine this result with the conclusion just reached. We may say that everything which appears is somehow real in such a way as to be self-consistent. The character of the real is to possess everything phenomenal in a harmonious form."

"I will repeat the same truth in other words. Reality is one in this sense that it has a positive nature exclusive of discord, a nature which must hold throughout everything that is to be real. Its diversity can be diverse only so far as not to clash, and what seems otherwise anywhere cannot be real. And from the other side, everything which appears must be real. Appearance must belong to reality, and it must therefore be concordant and other than it seems. The bewildering mass

[1] *Appearance and Reality*, p. 137. [2] *Ibid.*, p. 138.
[3] *Ibid.*, p. 139.

of phenomenal diversity must hence somehow be at unity and self-consistent, for it cannot be elsewhere than in reality, and reality excludes discord. Or, again, we may put it so: the real is individual. It is one in the sense that its positive character embraces all differences in an inclusive harmony. And this knowledge, poor as it may be, is certainly more than bare negation or simple ignorance. So far as it goes it gives us positive news about absolute reality."[1] One more quotation—"Diversity in the real cannot be the plurality of independent beings. And the oneness of the Absolute must hence be more than a mere diffused adjective. It possesses unity as a whole and is a single system."[2]

This, then, is the description of the Reality, the Absolute. It is the One including all appearances, excluding discord, uniting all diversities in one single system. *How* it does this is not yet considered. We have at present before us an assertion of the nature, the actual being, of the reality. And the proof of this is the absolute necessity of consistency. This necessity is based upon the law of Contradiction, which is for us compulsory. Thus the immense pyramid is balanced upon a point. "If we can be sure that the inconsistent is unreal, we must, logically, be just as sure that the reality is consistent." Absolute knowledge of the Absolute is based upon this one argument. If it will not sustain the immeasurable weight the pyramid must fall. I do not say that it will fall to pieces. Perhaps it possesses internal coherence. It may be that the only mistake is the resting it upon its apex. Set upon its base it may stand firm. But now we have to examine it balanced upon one point.

If I think of any subject-matter I must not assert of it contradictions: ergo, the subject-matter is free from contradictions—if I see it as it is I see no contradictions there. *It* is non-contradictory: *it* is self-consistent. Agreed. But the condition is that I must know my subject-matter perfectly; I must see it as it is. Let us look at some actual cases of knowledge.

[1] *Appearance and Reality*, p. 140. [2] *Ibid.*, p. 142.

Two straight lines can, cannot, enclose a space. Here are contradictions in one sentence. I must remove one and maintain the other. I think about a straight line, and find I have a clear intûition of its character. Then I think of two straight lines. Again my intuitions are clear and complete. The two straight lines may touch, or be so placed that when produced they touch. In this case they produce angles. I have a clear intuition of an angle. It is closed at the point, open opposite to the point, in which direction the lines diverge. The two lines may be parallel. In this case they never meet. If the two lines are in different planes, then the planes never meet or they intersect. In the one case the lines never meet, in the other they may meet; but, if so, as before, they form an angle. I have a complete intuition of all possible cases. The result is I reject the *can* and assert the *cannot*. Two straight lines cannot enclose a space.

An instance from physics. Here we find the distinctions of solid, liquid, gaseous. A solid mass has fixed parts, which keep their relative places; a liquid has parts which remain in contact, but can roll over one another and change places: a gas has parts which change places and do not remain in contact. Therefore a solid is not a liquid; a liquid is not a gas: and hence, I infer, a solid cannot become a liquid; a liquid cannot become a gas. In other words, the same mass, or the same kind of matter, cannot be both solid and liquid and also gaseous. But here my logic is at variance with the facts. Water exists in all three forms. The same mass of water may be ice, water, and vapour at different times. The same mass may be divided into three parts: one part solid, one part liquid, one part gaseous. Logic is overthrown, and the facts prevail. How can this be? I perceive on reflection that in this case I do not *know* my subject-matter perfectly. I do not know what water *is* as I know what a straight line is. I do not know that in a solid the particles are in contact: I only know that I cannot see any interstices between them. I do not know that these particles are relatively fixed: I only know that if they change places I cannot see the motion. Similarly, I do not know that the particles of a liquid are actually in contact. Nor can I see

that the particles of a gas never adhere. My original definitions were hypothesis, not knowledge. Consequently I do not accuse the subject-matter of inconsistency, but endeavour to frame new conceptions of the subject-matter, which shall exclude contradiction from my assertions. Still I cannot assert that I have a clear intuition of the actual consistency of the subject-matter. What I now assert is that I have no ground to assert inconsistency. Not knowing all the nature of my subject-matter, I can make no absolute assertions in respect to it.

Let us now take a case from psychology. In this sphere of thought I define matter as a solid mass, or a number of solid masses occupying space and being unconscious. Mind I define as thinking, willing, etc., which does not occupy space and is conscious. Therefore matter is not and cannot become mind; mind is not and cannot become matter. Mind and matter are *ultimately*, *absolutely*, diverse. They cannot arise one from the other; they cannot be fused together; they cannot act one upon the other. Here, again, the facts refute the logic. Mind and matter are fused together in the self: mind is conscious of matter; acts upon matter: matter acts upon mind. In the case of the three diverse forms of matter, the introduction of another concept, *motion*, helps us to harmonise the contradictions: by supposing more or less of motion, we have a compound concept, *moving matter* which can remain the same, and yet admit diversities. We cannot remove the contradiction between consciousness and unconsciousness. But we perceive that we do not *know* unconsciousness: it is a mere negation. And we do not *know* consciousness; for knowledge is the interpretation of consciousness. We perceive, we feel, our own consciousness; but we have no knowledge of it, at least no perfect knowledge, such as we have of a straight line. And we recognised that we have no perfect knowledge of matter. We cannot therefore assert an absolute contradiction between mind and matter. Nor can we assert absolutely that we know mind and matter to be ultimately one and the same. We can only assert that we perceive something which we call matter, and that we are something which we call mind or soul: but

of the ultimate nature of these somethings we have no knowledge.

It seems, then, that the only assertion which we can make, on the ground of the law of contradiction, is that, when we have a subject-matter before our minds, we assert that *if* we could know it we should know it to be self-consistent. Self-consistency is necessary for our knowledge; but it is not necessary to the existence of real things that *we* should know them. Things may *be* real though they *appear* contradictory to us. Can we go beyond this? Dr Bradley asserts that whatever is or exists is and must be self-consistent. And our intellectual nature certainly demands or desires this. For how otherwise should we know the universe or any part of it? That our knowledge may be absolute and all-embracing, we must postulate universal consistency in real things. *If* all things are parts of one system, mutually dependent upon each other, then we can have *no* knowledge unless the system is self-consistent. For whatever be our subject-matter, the straight line for instance is on the hypothesis part of the system, and thus affected by the whole and its position in the whole. Consequently the intuition we have of a straight line would not be reliable if the whole system is not reliable. The hypothesis of universal consistency is necessary if our knowledge is to be regarded as absolutely fixed and certain. But dare we make this claim? So far as knowledge extends the consistency holds good. But beyond—throughout the infinite or indefinite unknown? In respect to any one particular case under examination we must make the postulate. Unless it holds here we cannot add this particular to knowledge. And all probability is in its favour. We have, let us say, found it true in a million cases. In the million and first case there are a million cases in favour of it, and this case is not against, is merely undecided as yet. But, on the other hand, all our million cases and millions more may be all cases of some peculiar nature by which they are capable of being known; how can we tell that there are not vast regions of being which from their nature are inaccessible to our knowing capacity? As matter of fact, our present actual knowledge does not exclude *apparent* contradictions; contradictions

which, for us, remain and cannot be removed. And while it is true that all probability is in favour of the consistency of things, that does not mean that it is in favour of our present knowledge abiding for ever unchanged. The change from geocentric to heliocentric astronomy not only displaced a previous system, it removed an apparent knowledge, and gave us in its stead an awareness of ignorance. The geocentric was a system of the universe; now we have no system of the universe—only a solar system. Who can tell that some future advance of knowledge may not revolutionise our whole way of conceiving the universe from top to bottom? Indeed, if we adhere logically to this Absolute system, absolute knowledge is impossible for us until we know the whole; our truth is "relative and always imperfect".[1] What we seem to want first of all is knowledge of knowledge. In the absence of this it is unsafe to assert that any of our knowledge is *absolute*.

But we have to consider the argument on the other side. We are told that the assertion of consistency "gives us positive news about absolute reality". How does this come to pass? The only absolute criterion we have is consistency. By the application of this criterion all our appearances have been wrecked. Consistency alone is nothing: it is a mere word; the consistency which is a reality is that of something with itself; that is, of a something which is not a bare monotony and homogeneity without internal differences. Consistency is a predicate which requires a subject. Where then shall knowledge of the Absolute find this subject? The law of Contradiction will not give it. Time, space, causation, things, the self—all these, that is our whole known world, the application of the test has proved to be unreal. We are left with "consistency" and the void. This situation is the logical end of the argument; but practically it is untenable. Our thinking goes on, our consciousness continues, the world is as it was. So the argument is resumed by recognising that all the appearances "belong to reality"; they are not real as we were thinking them; but the subject-matters about

[1] *Appearance and Reality*, p. 363.

which our thoughts were engaged, these are all somehow real. "Every judgment, whether positive or negative, and however frivolous its character, makes an assertion about reality."[1]

It is plain that here we must demand a definition of, or meaning for, *real* and *reality*. And we want a meaning which shall justify its application to all those things which were condemned as appearances, and shall be something other than "consistency"—for these, as they stand, are not consistent. Again the meaning must not openly or covertly assume anything which requires proof, and which the argument professes to prove. To find such a meaning, I apprehend, will be difficult or impossible. The author does not attempt to aid in the search; as indeed for him it is not necessary. He knows that there is only one Reality. Appearances as such are not real. However, they exist, and as they cannot fall outside, they must belong to the reality. We are told, again, appearance must be "somehow real"; and this means "other than it seems". Thus we have a contradiction: appearances are real and are not real: and thus there are two meanings for the word "real": but neither meaning is explicity stated. Later in the book "degrees of reality" are discussed; but I am unable to discover there any meaning for "real," except agreement with the standard—that is, the Reality. Speaking from the point of view of the author, I should boldly say: *Nothing* is real except the one whole Reality, taken *as a whole*. Every part within the whole, whether an archangel, or a man, or a gnat; a world, a solar system, or a universe; a law of gravitation, or a process of evolution—whatever you can think of or name —is unreal, when you abstract it and think of it so. Each thing is real *only* in its place and function in the whole system; and to know it as it is, you must know the whole system and it as in that system: for example, as we can only *know* the human heart in connection with its valves, the arteries, the veins, the blood, the lungs, and, in a word, the whole human body. But we do not know the whole system; our knowledge is abstract: it is of parts without

[1] *Appearance and Reality*, p. 366.

accompanying knowledge of the whole. The logical result is that all our knowledge is necessarily false; and therefore, *if* we know the absolute, we only know it falsely. The vice of Contradiction crushes us in its resistless grasp. Dr. Bradley shrinks from this annihilation; and no one can blame him. He suggests that existence in time will serve as reality—at a pinch. But the fact remains "real" has no signification assigned to it—or none of any value. The real taken in this loose way includes error, illusion, falsehood, shams, all forms of untruth. To find consistency in a vague totality which embraces these intellectual aberrations is hopeless. We must pass on, with the observation that reality cannot be taken as a *class* name. It applies to *everything:* therefore it means *nothing*.

We have therefore this situation to consider: on the one hand, non-contradiction or consistency is an abstract concept, of itself indicating nothing more than that *if* we assert anything the assertion must not contradict itself. On the other hand, we have a vast and vague mass of particulars and indefinite generalities which are not derived from the law of Contradiction, but being there are brought to it for judgment. Consistency is a criterion, but is not a basis. You cannot deduce any fact or reality from consistency; you can only employ this law to detect and reject the inconsistent as unreal. The indefinite mass is represented by judgments of identity. Whensoever these judgments have not come into collision, and thus the criterion has not been applied, they stand unchallenged; but it does not follow that they are absolutely true. Nevertheless, for lack of any alternative, this indefinite mass must be taken as existing—and to that extent real. But its character is plural—taken as it stands, it is not a unity. Seeing that it includes all the contradictions—apparent they may be, but irremovable—which perplex us, it seems impossible to predicate unity of this reality. And having no meaning for "real" which will fit *all* its contents, would it not be better to drop this term altogether? At any rate we shall do no harm to the argument by using the other term for the Reality—the Absolute.

The Absolute "possesses unity, as a whole, and is a single system". We have to consider, not whether this dogma is true—I would not willingly cast a shadow of doubt upon its truth—but, first, the meaning of the assertion in the philosophy before us, and, secondly, whether the argument *proves* its truth. *Unity* is by itself an abstract concept, valid in arithmetic; outside of arithmetic it requires a "something" to give it meaning. A *whole* is also indeterminate: it may be a mere collection of diverse incompatibles. We have, then, "a single system" as the real unity. Of systems, there are mechanical systems and organisms; there are also social and political systems; but the author chooses none of these as his analogue for the Absolute. The "concrete nature" of the Absolute system is, he tells us, "experience". "Experience means something much the same as given and present fact. We perceive, on reflection, that to be real, or even barely to exist, must be to fall within sentience. Sentient experience, in short, is reality, and what is not this is not real."[1] "Every element of the universe, sensation, feeling, thought, and will must be included within one comprehensive sentience."[2] This is "the Absolute".

We have now a dogmatic statement. The Absolute is sentient experience. This excludes all materialistic and mechanical interpretations of the universe. It asserts that the Absolute is anthropomorphic. The only sentient experience we know is human experience—corporeal and mental. The human being, all human beings, are only a part in the Absolute: the part abstracted from the whole is unreal, does not exist. Hence the Absolute is not *merely* sentient experience, but something other, something more, something which altogether transcends human experience. Moreover it is questionable whether human experience is "a system". It is however not our business now to criticise the dogma—though, to avoid misconception, I may remark that the author is far from overlooking this difficulty; and his effort to imagine Absolute being and how it overcomes all con-

[1] *Appearance and Reality*, p. 144. [2] *Ibid.*, p. 159.

tradictions is admirable, if futile—but to ask how the *unity* of the Absolute is *proved*. And here, on the threshold, I note an ominous sign. The dogma conceives the Absolute anthropomorphically. This anthropomorphism I hold to be necessary, to be rational, to be the only possible way of conceiving the Absolute if the Absolute is to be brought within the region of our *knowledge*. It is not the dogma with which I am now concerned, but with the *proof* of the dogma, with the *reasoning* which is to convert the dogma into "positive knowledge" or "absolute knowledge". It is ominous, I say, that the author who undertakes to prove the unity of the Absolute cannot prove the unity of the self, cannot find a well-defined meaning for the self, condemns the self as unreal, because unintelligible, and, chiefly, because no principle which unites its diversities can be brought to light.[1] That which he cannot accomplish for the finite self he proposes to do for the Absolute Self. How does he proceed? First, he examines this "experience," our experience, for evidence. He observes (1) the whole of "mere feeling or immediate presentation"; (2) our feeling of *hostility* to distinctions; (3) the suggestions contained in the conception of a substantial totality beyond relations; and in the ideas of goodness and of the beautiful; (4) "Now if we gather (as we can) such considerations into one, they will assuredly supply us with a positive idea. We gain from them the knowledge of a unity which transcends and yet contains every manifold appearance. They supply not an experience but an abstract idea, an idea which we make by uniting given elements."[2]

Such is the *proof*. The author is satisfied with it. "Our conclusion, so far as it goes, is real knowledge of the Absolute, positive knowledge built on experience, and inevitable when we try to think consistently."[3] Behind this brief enumeration of reasons lie chapters and books, in which are contained the details of the several arguments. To criticise these would require volumes. Here I would only remark: (1) mere feeling or presentation is consciousness, not knowledge; it is experience as yet uninterpreted; (2) our hostility to contradictions is subjective feeling; (3) all these suggestions account for our striving after a knowledge of the unity of the whole mass of sensuous and spiritual facts; but do they, taken as they are, give the knowledge which they crave? (4) the abstract idea of a unity does not seem to me real knowledge that there is such a unity. It is not that I mislike the conclusion: it is not that I find the premises worthless; but I am unable to perceive their adequacy. Each one of the four sections of the proof contains debatable matter. The first assertion, that "in mere feeling or immediate presentation we have the experience of a whole," seems to me questionable. We are referred to four chapters as supporting this thesis: but I search these in vain for a clear and certain demonstration. This experience is individual human experience. Does the assertion apply to each momentary separate presentation? or does it mean the totality of such presentations? The single moment's consciousness seems to me sometimes if not always to contain or have a feeling that it is not the whole. Does it mean the totality of such immediate feeling? This by its successiveness is incomplete. The "experience of a whole" implies that the whole as such is known: that it is definite, seen altogether, can be mapped out or somehow described. It is not so in my experience. I feel that I do not know the limits of myself, the whole of myself; and that I never have the whole of the objective world at one time in my consciousness. And here I must leave the question. The proof offered fails to produce conviction. And I hardly see how it could be possible, out of one and the same experience, to prove the unity and reality of the Absolute, when the criticism of that experience has already asserted the lack of unity and the unreality of the self. Man's experience, it is said, does not show that he is a real individual; yet it is said to prove that the Absolute is a real individual. It may be that the trained metaphysician, if he has genius, can and does see logical proof where I cannot see it. It may be that brain-energies differentiate and evolve, until we have amongst us men of like bodily form with ourselves, but who possess some new intellectual faculty which we have not. Or, possibly, there is something faulty in the

[1] *Appearance and Reality*, pp. 119, 120. [2] *Ibid.*, pp. 159, 160.
[3] *Ibid.*, p. 161.

psychology and the theory of knowledge which underlie the discussion. "The whole question turns," says our author, "on the sense in which we are to understand 'knowledge'"—and he has not told us what this sense is.

"We have seen," says the author, "that the various aspects of experience imply one another, and that all points to a unity which comprehends and perfects them."[1] This is a conclusion with which I concur. I have a dream of an argument based upon the certain facts of consciousness and experience—scientific, aesthetic, ethical and religious—rising in converging lines towards one supreme, all-harmonising concept which can never be actually completed, never perfectly expressed, the concept which has been here called the Absolute, but is usually named GOD. Such an argument would be the pyramid standing firm upon its base, its converging lines pointing to the conclusion far above man's finite intellect, but nevertheless his reason and his faith would be assured of its necessary truth and reality. Would that another Bradley were given us to make this dream an accomplished fact! *Appearance and Reality* seems to contain much material for such a work; but to fail because it claims an "absolute knowledge," which to man is impossible. In some moods its author realises this. To continue the quotation of which the first sentence is given above. "And I would urge next," he goes on, "that the unity of these aspects is unknown. By this I certainly do not mean to deny that it essentially is experience, but it is an experience of which, as such, we have no direct knowledge. We never have or are a state which is the actual unity of all aspects; and we must admit that in their special natures they remain inexplicable. An explanation would be the reduction of their plurality to unity in such a way that the relation between the unity and the variety was understood. And everywhere an explanation of this kind in the end is beyond us." I do not read this as a retractation of the claim to have knowledge of the Absolute, but as an admission that such knowledge is imperfect. "We do not know why or how the Absolute divides itself into

[1] *Appearance and Reality*, p. 468.

centres, or the way in which, so divided, it still remains one."[1] If, for our thinking, the unity and the diversities are not harmonised—if we do not know the *uniting principle*[2]—can we rightly claim to have knowledge at all? But, after all, we have as yet no clear agreement as to what knowledge is. And so I must break away from a book full of profound thought, close reasoning and valuable suggestions; but which leaves me convinced that its dogma is not proved.

[1] *Appearance and Reality*, p. 527.

[2] See p. 120 and above, p. 6.

CHAPTER VIII.

SCIENTIFIC CONCEPTS IN PHILOSOPHY.

SPACE, time, matter, motion, etc., are concepts taken over by science from common knowledge. They are called ultimate, because analysis fails to reduce them to lower terms, is forced to acknowledge them as inexplicable. The scient accepts them as his presuppositions—treating them in fact as he treats the data of sense—they are his *data*, without which he has nothing to work upon. He is justified in this proceeding, because he does not pretend to aim at universal and perfect knowledge. Things as they are perceived immediately by our senses appear confused and irregular. The ordinary observer succeeded to some extent in understanding the true relations of things: and in the growth of his knowledge these concepts were formed. The scient continues on the same road. He attempts to give precise definitions to common-sense terms; but is obliged to confess his inability to explain the realities to which they refer. The philosopher, intending to explain everything, cannot tamely accept inexplicable presuppositions. These concepts therefore are subjected to re-examination—the result of which we are now to consider.

The first difficulty is to draw up a list of these ultimate concepts. The length of this list depends upon the number of the sciences. A short list suffices for mathematics and physics; biology includes this list but requires additions; if you regard psychology as science, a still longer list is necessary. For the sake of brevity, let us mention here space, time, matter, force, thing, change, cause. These seven, at least, seem to be indispensable for the exact sciences; and even here we are including motion as equivalent to, or a derivative from force and number as derived from

time—both doubtful assumptions. It will be enough if we glance at the philosophical treatment of two or three of them. Our question is this—does philosophy contain any knowledge of these concepts other than and superior to that of common-sense and science?

SPACE AND TIME.

To begin with space—the philosopher's first difficulty is that he does not know whether to call space something or nothing. Is space real? Is there any such thing as space? Or is space a mere empty notion, a phantasm of the mind? Space may be occupied, or it may be empty. If occupied, the space is not the thing which occupies it. If unoccupied, what is the space? It seems to be just—nothing. Suppose a block of wood, measuring twelve inches every way, is on the table before you: it occupies one cubic foot of space. Now push it just one foot out of its place. The block is still what it was before: it still occupies one cubic foot of space: but the space it occupied before is now empty. Did the block carry its space along with it when it moved? If it did, then its first place is now destitute of space, and the second place has two folds or portions of space in it. If the wood did not bring its space with it, but left it behind, then the wood has no hold upon the space, does not really *occupy* space. Space makes no difference whatever to the wood; and the wood makes no difference whatever to the space. The occupation of space is not an idea which arises out of the concept of space, nor out of the concept of matter taken by itself. If you try to poke your finger into that cubic space occupied by the wood, then the concept of occupied space arises. One mass of matter fills a portion of space to the exclusion of another mass of matter; but if space itself is considered, that seems perfectly indifferent. The thing may come, and the thing may go; two things may collide, and cohere, or rebound; space permits anything, resists nothing, is itself absolutely inoperative. What, then, is space?

Again, is space finite or infinite? If we suppose space to

be finite, where are its boundaries? The mind finds it impossible to conceive of boundaries beyond which there is no space. Hence space is infinite. But to say this is to say that space is inconceivable; for our conception of infinite space is only a negative conception: it is fancying oneself going on for ever and for ever—never coming to an end. Space is not only encumbered by this insurmountable difficulty: it is not only infinite but infinitely divisible. Here however we encounter another contradiction. The concept of space represents it as continuous: that is, as indivisible. In every direction space is one, unbroken, undivided continuity. Nevertheless, if we think at all of space as divisible, we are compelled to think it infinitely divisible. And in the attempt to think it thus, the mind fails from its own incapacity. To us the infinite is inconceivable, incomprehensible.

Time is a concept even more perplexing than space. At first sight it appears simpler. We seem to know so well what we mean by the even flow of time, second after second, minute after minute; and by the terms present, past, future. But philosophical reflection reveals unfathomable mysteries in the concept. Space is, at least, permanent. Whatever space is, that it was, that it will be: it is stationary, immutable, invariable; one unchangeable whole. Space is timeless. We cannot conceive it as beginning, nor as ending, nor as growing old. Whatever it is, it is always. It is not only infinite but eternal. The essence of time, on the contrary, is transience. It *is*, and in an instant it is *not;* it is gone for ever; a new time is; and that only appears for a moment, to disappear again as quickly. Thus time is a ceaseless contradiction of *is* and *is not*. It is conceived as unbroken, as continuous, as one: and it is also conceived as existing and non-existing, as coming and going; as real only in the present moment, and yet the past moment has been, and in its brief reality received an imprint which can never be altered. The future moment is not yet; does not exist: is wholly unreal—this is the most perplexing of all. Does the whole universe perish every moment, and is a new universe created every moment? To believe this is impossible. Yet, if the future already is real, is really *there*, though for us it is still not yet in existence—

then, what is time? If taken separately, space and time are concepts involving insoluble perplexities, taken together contradiction is piled upon contradiction. Time is conceived as properly figured by a point moving onward with uniform velocity in one direction. To combine this with the whole world of events, we must think of an infinite number of such points, moving in parallel lines. So imaged, time is a plane in which alone all the real is contained; while behind and before are the two eternities, the past and the future. But all events, at least all events in the material world, are not only in time but also in space. We have, then, the time-element of things ever dying, ever born anew; the space-element fixed, immutable, unalterable by time; already existing while the future time is yet unborn. Thus space and time are concepts which cannot be united together. One more difficulty: time is conceived as a continuous, unbroken unity: if this is so, where is yesterday? and where is to-morrow? Without its divisions, its changes, its differences of past, present and future, time is not time. Take away its finite portions, the concept of time vanishes: and yet how can the time-differences co-exist with the time-unity?

All these insoluble enigmas in space and time are not invented, but dragged into the daylight by philosophical reflection. To common-sense folk, space and time are mere matter-of-fact ideas. One thing is large, another is small; one place is close by, another a long way off. There is plenty of time to do something, or no time to spare. Common-sense deals with time and space only in the concrete; does not trouble itself with the abstract concepts at all. Mathematics reasons about numbers and spatial figures; but the attention of the scient is wholly absorbed in his knowledge: the underlying concepts he does not make any effort to investigate. Philosophers are unable to ignore what they cannot understand. They are compelled by their desire to understand everything, to explore every mystery to the utmost possible. The result is that we have to thank the philosophers for bringing to light all these difficulties. They have demonstrated that space and time are inscrutable.

One and only one way of escaping these difficulties has

been suggested by philosophy, and this is the suggestion that space and time are not realities, but somehow the creatures of human imagination. Leibniz and Kant agree in holding that these concepts are subjective only, not external realities; but they adopt different ways in arriving at this conclusion. Leibniz reasons back from his theory of monads to the unreality of time and space: Kant begins by demonstrating, as he believes, their unreality, and founds upon this his doctrine that we know only phenomena, not the real things themselves. Kant condemns the Leibnizian theory. Kant's disciples have generally rejected his doctrine of things-in-themselves; and Kant's opponents strenuously combat his doctrine of time and space. Under these circumstances we might be excused from noticing Kant's argument; but it is so important a landmark in the history of philosophy that it is worth while to spend a little time in noticing it.

Kant's first point is that space is not an empirical notion which has been derived from external experiences. Since his time psychologists have thoroughly explored the processes by which the perception of space arises. It is partially suggested by vision, which sets before us coloured expanses, that is, two-dimensional space. Touch feels surfaces, lines, angles, and all round an object. To these two senses the perception of three-dimensional space is chiefly attributed. Other sources are muscular motion and the movement of the whole body from one place to another. But it does not appear that these sensations and movements alone give or could give the concept of space. The concept is a product of *thinking*. Unless there were an intelligence reflecting upon the facts of experience, and putting them together, the concept of space would not arise. So far Kant seems to be right. Space is a *mental intuition:* the mind sees it as it is: the eyes see it as it is not. Things *look* to us not according to their true spatial relations but quite otherwise. Near things look large, far things look small; according to their distance not according to their real size. To our vision things seem to touch one another which are miles apart. We mentally rearrange all visual phenomena in their true spatial relations. Kant's assertion that space is a mental form which we bring

to the phenomena is not wholly without basis. But his view that it is wholly *a priori* and independent of experience does not appear to be supported by the facts. Rather, I should say, is our concept of space an instance of knowledge interpreting consciousness. The facts of the external world contain and depend upon spatial relations; but it requires intelligence on our part to discover the true spatial relations from the facts.

Kant's second point is that space is a *necessary* idea; and he adduces the demonstrative certainty of geometrical reasoning as the proof of this. Space is not a generalisation from a number of particular instances of space, but is one single pure intuition: moreover, it is infinite. From all these considerations Kant infers that space is not an idea of any property of things in themselves or of their relations to each other, but it belongs to our minds, and only to things as they appear to us. This involves the startling inference that we never know things as they really are; we know them as they are not: we know them as they seem to be: if we could know them as they really are, we should know them to be non-spatial. In regard to time, Kant reasons on parallel lines, and arrives at a similar result. If, then, Kant has succeeded in dispelling all the difficulties and puzzles connected with time and space, it is at the heavy cost of branding all our knowledge of things in time and space as phenomenal, not real. Is not this jumping out of the frying pan into the fire?

But has Kant relieved us of our difficulties? True, if space and time are mere mental forms, that is, ideas which we imagine and attach to things, we need no longer trouble ourselves with their infinity and infinite divisibility. And we need not ask what space *is?* what time *is?* for an answer has been given. But apart from the ruinous effect of that answer upon our knowledge of the external world, it still remains the fact that we conceive space as we did before. It is open to us to adopt the method of common-sense and of science—that is, not to think about space and time at all except in their connection with concrete facts, and so far as we need them for that purpose. But if we do think about

these concepts philosophically, we still find all these inherent difficulties in them; and a new one in addition. Why should our minds be so constituted that they cannot help thinking of space and time thus and no otherwise? One would have supposed that as mere mental forms they could be used or dropped at our convenience: but it is not so. Kant, therefore, while proving, as he believes, that all our knowledge of things is merely phenomenal, has left us as heavily burdened with metaphysical difficulties as we were before.

When the preceding pages were written I supposed that philosophy confessed itself shut up to one of two alternatives, either to acknowledge the inscrutability of time and space, or to adopt the idealistic theory which takes time and space as mental forms not objectively real. This statement must now be withdrawn; for recently a philosopher has published a realistic system in which he attempts to show, by analysis of experience, that time and space are "objectively real," are in some sense "absolute," and are the foundations of positive science.[1] In part iv., chapter ii., reasons were given for dissenting from the fundamental principle and from the methods of this objective analysis of consciousness. The conclusion there reached might absolve us from separate consideration of the results of that analysis; but the importance of the concepts now before our minds, both to philosophy in general and to the theory of knowledge in particular, make it advisable to pay careful attention to the demonstration offered to us. If it can be proved that we really know time and space, the consequences will be felt throughout a wide area of thought.

In respect to *time* we have already commented on the analysis of this concept; but then we concentrated attention on the objectivity of the process of analysis. Now we observe the result: time, it is asserted, is known as a really existing object, as a real condition, as one of the two fundamental real conditions. By "real condition" is meant causal reality. And this real time is said to be perceptually given in the simplest forms of experience. It is claimed that we have

[1] *The Metaphysic of Experience*, vol. ii., chap. i., sec. 1.

given, in our own experience, where it is discoverable by philosophic analysis, a true, objective, positive knowledge of time as a real existent: a knowledge upon which positive science can be built up. Hitherto we have regarded common knowledge and the sciences as accepting the reality of the external world without discussing how we come to know and believe that reality. This external world is the world of time and space, and belief in time and space as features or ways in which this real world exists relatively to us is involved in the third fundamental certitude. What the analyst of experience professes to do is to make the certitude hitherto accepted in faith a matter of direct and self-evident knowledge. To effect this would be a splendid achievement: but has it been effected?

The analysis, as we saw, selected a musical note C as an empirical unit; discerned in this unit two elements, *time* and *feeling*, in inseparable relation with each other. "Time and feeling are ultimate elements in all consciousness and all experience; and as such are incapable of strict definition. The lowest conceivable moment of experience contains both time and feeling; and the lowest empirical moment as it actually comes to us contains both sequence in time and difference in feeling."[1] Where, then, is the *knowledge* of time? Confessedly time cannot be *defined*—but such is the case of all ultimates of consciousness. We admit that. In the simplest sensation there is a feeling which ultimately is inexplicable; but feeling contains *differences;* that is, there are *many different feelings;* and it is observation of their likeness and differences which leads to what we call knowledge. Tone C, tone D, colour *blue*, colour *red*, though the feeling in them cannot be defined, can be recognised, described, and in a manner *known*. But time has no differences. It is one thing, concept or reality. No one seems to know *what* it is; but every one agrees that it is all alike, continuous, without any differences in itself. If, then, *time* cannot be separated from feeling, and is nothing conceivable apart from feeling, can we be quite sure that *time* really exists?

[1] *The Metaphysic of Experience*, vol. i., pp. 64, 65.

Moreover, when we look closely at the analysis, we remark that not *time* but *duration* is observed. What is *duration?* It seems to me that *duration* can only be explained by reference to a conscious being who perceives that a flash of lightning is gone in a moment, that the sun sinks slowly behind the hill, and such experiences. Duration is itself a sort of feeling, only it is one that never exists by itself. As the analyst rightly observes, duration is inseparable from quality: but then is it anything at all apart from the feeling in which it is involved? In "conscious being hearing note C" I cannot discern three elements, consciousness, time, feeling. There is the conscious being and there is his hearing, which is for the moment his state, or part of his state. So far there is no third element. The hearing lasts, has *duration;* but the duration cannot be separately perceived; is not a distinct element; cannot, I think, be perceived at all in a single isolated perception. Duration is perceived through a comparison of many perceptions. In a second state, hearing note D, a new fact comes to light: namely, sequence, change of states; and this, I think, is a more powerful factor in producing the feeling of time than mere duration. But this sequence, this perpetual change, this vanishing of feelings and entrance of new feelings, is wholly different in character from an equable duration, an unbroken continuity, which is the scientific "absolute" time. In fine, the professed attempt to analyse experience in order to discover there "time" as an "element," or constituent, in some way an *objective* reality, seems to me a failure. If the analyst had really apprehended *time* as an objective reality, we might ask him—when did time begin? how long will it last? or is it in fact an infinite going on and on, back and back, without beginning, without end? Seeing that, so far as we can gather, he knows nothing more about *time* than we do—that is, really nothing at all (although in a common-sense way we accept it as a mode or way in which our experience comes to us)—we need not push these questions.

"Space is the name for the combination of the extension derived from sight, and the extension derived from touch, abstracting in thought as far as possible from the sensation

elements of both senses."[1] As *time* is not immediately perceived, but is derived from two simpler perceptions—duration and succession; so *space* is derived from two extensions—extension seen and extension felt by touch or pressure. What, then, is *extension?* In actual fact we can no more see *extension* than we can hear *duration.* As before, *extension* is called an "element"; but it is really inseparable from feelings of colour, pressure, temperature. Even the empirical unit, *e.g.*, "seeing the blue sky," is not to be got at as an isolated unit: it is a fraction not a unit, a part or aspect of a state of consciousness. Extension is ultimate and inexplicable. The analyst can only describe it as a "space-element". Thus space is extension; and extension is space: but we have no indication given us as to the nature of space other than that of our concrete way of apprehending it in and along with all the rest of our conscious experience. There is nothing new in this description of space except the phrase "the name for the combination". Why is it not called at once *the combination* of visual and tactual extensions? I suppose because it is not easy to see how these two kinds of extension can combine, although the actual concept of space finds room for them both. What combines the many and various spatial perceptions? I take it that they are combined by the mind, the thinking being. We know that the combination has somehow been effected in a way which answers the purposes of common-sense and of science; but neither psychology nor philosophical analysis seems able to explain *how* it was done. In any case it was the work of human intelligence. In fine, it does not appear that the analyst has any more or better knowledge of space than the rest of us. "'Our' space," he says, "must be that in which thought and sense-perception combine to show that we actually live and move; and this, I have tried to prove, can be no other than that infinite Vacuity, with which the physical world of Matter may possibly turn out to be conceivable as co-extensive."[2] And so he has conducted us to the "infinite Vacuity," of which he himself has said pure Vacuity is only a name;[3]

[1] *The Metaphysic of Experience*, vol. i., p. 296.
[2] *Ibid.*, vol ii., p. 125.
[3] *Ibid.*, vol. i., p. 297.

where he leaves us with a pious hope that we shall feel ourselves at home there. But I would respectfully submit that this proposal to identify the common-sense perception of space, which takes it as an inseparable aspect of a concrete reality, confessedly known only in part and imperfectly, with the "infinite Vacuity," which is not known at all, is unjustified. Here we certainly have no demonstration that space is a real objective substance or quality or condition. Time and space are as unintelligible as ever. A philosophy which rests upon these concepts as part of its foundation is built upon ignorance, not upon knowledge.

MATTER AND FORCE.

Matter and force are concepts sufficiently intelligible to common-sense: to science they are inexplicable but usable: they completely baffle philosophy. What is *matter?* Nobody knows. To common-sense matter is a general name for kinds of matter: stone, water, iron, air, flesh, are all matter. What is there common to such different things? All of them are perceived through our senses; all of them occupy space; all of them are supposed to be unable to think: these similarities seem to justify common-sense in calling all of them matter. The physicist has endeavoured to find some tolerable definition of matter, but does not appear to have succeeded to his own satisfaction. The metaphysician seems unable to suggest anything better than that matter is what occupies space. But we have just seen that space is unintelligible. Whether we accept or reject the Kantian doctrine of space, in either case we cannot use space as a help to the understanding of matter.

What is *force?* Here we are in the same case as before. To say anything about matter we were obliged to introduce the unexplained concept, space. Similarly, if we are to speak of force, we must fall back upon the undefined term, matter. Force is matter in motion: either that which makes matter move, or the motion itself taken as a fact. This however requires further conditions. The concept of force does not arise from one solitary mass of matter by itself,

but from the mutual action of two masses of matter upon each other. This mutual action is the resistance by each mass against the entrance of the other mass into the space occupied by itself. Thus we have three concepts, space, occupation of space, and maintenance of that occupation against an intruder. The second and the third of these two concepts seem to be identical. The holding of space against an attempted invasion is its occupation. Thus the concept of matter appears to be superfluous. Force occupying space can do and be everything which is ascribed to matter. If a force acting from the centre of a sphere repels every attempt to penetrate into the sphere, the sphere is *occupied* just in the way in which matter is thought to occupy space. Some physicists have supposed that force is matter: or it may equally well be said that matter is force. Again, motion is necessary to the concept of force; for while all things remain at rest, there is no manifestation of force. Taken by itself motion *seems* perfectly intelligible, because we see things moving from place to place; we see them beginning to move and ceasing to move; and we ourselves move. But in order to conceive motion it must be motion of something; and the something is something which does not occupy any one portion of space in preference to any other portion, for it moves from one place to another: and so far as the idea of motion is concerned it moves quite freely. If the moved thing is *matter*, then the matter must have force, or suffer force. What, then, is force? We saw just now that matter and force might be synonyms: either might be substituted for the other. Now force as motion appears to be something different from matter: but a matter which exerts no force seems a nonentity, an empty concept indistinguishable from space: and a force existing by itself apart from matter seems to have nothing to do with matter. We are in a tangle. Matter, force and motion cannot be separated from each other. Taken in the concrete, as names used by common-sense and physical science to describe known facts and their changes, they are intelligible and useful. "The earth moves round the sun according to the law of gravitation" is an intelligible statement. Sun and earth

are material masses; motion of earth round sun is mentally picturable; gravitation is the name given to the force which causes the motion observed. For astronomical science this is satisfactory. But the scient has to admit that gravitation is an *unknown* force. The philosopher is bound to ask not what kind of force is gravitation? but what is force itself? Is it anything at all other than a statement of the fact that masses of matter do move? He is bound to ask the questions—what is matter? what is force? and also, it seems, is compelled to answer "I do not know". Matter, motion and force are concepts dependent upon the unintelligible concepts, space and time; and are themselves also separately unintelligible. Not separated, but regarded as mere aspects of a concrete whole, they are in a fashion intelligible; for they can be used to support and interpret each other. Possibly, if we could get only the two concepts space and matter as clearly defined data, time, motion and force might somehow be derived from these two. I doubt it: but at any rate of the two concepts space utterly baffles us. Matter, owing to its visible and tangible characters, seems to be known as real; but this seeming knowledge is a pricked bubble under the touch of philosophical criticism.

The Metaphysic of Experience does not admit this. In this philosophy it is asserted that *matter* is the only known fundamental reality, and the "real condition" of consciousness. The definition and description of matter here given must be scrutinised. The analyst of experience does not claim to be able to extract matter as a separate thing. On the contrary, he insists "that it is an instance of the inseparability of distinct elements". . . . "That solid tangibility which we call matter includes force, and cannot exist as matter without it. Similarly there is no such thing as force, unless it be inherent in or exerted by matter." . . . "And this holds good of the ultimate atoms or particles of matter." . . . "Force, then, is one of the inseparable constituent elements in matter. But what is the other, or others, if more than one? Our previous analysis shows that there are two and two only; one the element of time-duration which matter, like all existents without exception, must occupy if it exists

at all, and the other the element of spatial extension in three dimensions, though this is not so wholly simple and unanalysable as time. In all cases where matter is perceived or thought as perceivable, what we so perceive or think of is some portion or portions of three-dimensional space, each coherent within itself, and offering resistence to touch or pressure from without."[1] Already the inseparability of the concepts, matter, motion and force, from those of space and time has been adduced as a proof of the unintelligibility of each of these concepts. Here we need only call attention to the peculiarity of making *time* an element or constituent of *matter*. Elsewhere time is left out, and we have the briefer definitions—"Matter is space occupied; Force is the occupation of it".[2] Let us consider this brief statement. Matter: space: occupation: force—here are four terms. First of all —matter *is* space. This affirmation by itself cannot stand. Matter *is* a peculiar kind of space, or space affected in a particular way; it is *occupied* space. What is "occupying" or "occupation"? Answer — *force*. But we must not say "matter is force": for these are two inseparable elements of one substance. What, then, is this substance? Whether we take it as a dual compound, matter + force; or a triple compound, space + time + occupation; or a quadruple, space + time + occupation + force; it seems equally unintelligible and inconceivable. Matter is x.

The quotation given above referred to "ultimate atoms or particles of matter," which in that place the author referred to as hypothetical. But he is of opinion that matter is not, like space, infinitely divisible. "When we consider what is involved in the occupancy of space, it becomes evident that it is impossible so to conceive it. Occupancy of space involves coherence or cohesion of the parts occupied. Two portions at least of space are therefore requisite for coherence of parts, and consequently for the material occupation of any portion of it. Neither of these two contributory portions of space taken severally (whatever may exist in them) are or become a portion of matter, but only the two taken together."[3] Dis-

[1] *The Metaphysic of Experience*, vol. ii., pp. 126, 127.
[2] *Ibid.*, p. 135. [3] *Ibid.*, p. 129.

tinguishing this indivisibility of matter from the empirical minima of perception or consciousness, which are ideally divisible *in infinitum*, he continues—"In matter, on the other hand, two parts (at least) of three-dimensional space must be conceived as distinct from and co-existing simultaneously with each other before we can conceive the existence of even the smallest portion of matter. . . . If it occupies space at all, it must occupy at least two contiguous portions of it simultaneously; and this is a property of its nature as space-occupancy, a property which we arrive at by analysing it into its two constituent elements, and not by any consideration of the relative magnitude of the portions which we may successively take for analysis. Consequently we must conclude that there is what may be called a *minimum physicum* in the world of matter. We cannot conceive matter, as we can conceive consciousness, divisible *in infinitum*. However far we may push our ideal division of any portion of it, there are always two parts of that portion, neither of which severally is matter. In successive divisions it would cease to be matter before the space occupied by it ceased to be divisible."[1]

The above is rather a long quotation; lest, perhaps, as taken out of its context, it should not be quite clear to the reader, I will give the author's condensation. "Briefly to resume the foregoing argument:—Matter is always divisible in thought, because it occupies space; but since it always consists of two portions of space at the least, it follows that it is not infinitely divisible without ceasing to be matter, as space is infinitely divisible without ceasing to be space. Owing to its element of Force, it is not a simple continuum, but a compound of two (or more) continua in interaction; there is action and re-action in every particle of it. There is thus some finite minimum of volume which matter must occupy, if it is to exist as matter at all."[2]

Thus the author proves to his own satisfaction that matter is not infinitely divisible. There are ultimate particles, or atoms, or volumes, which cannot be cut in half. If they could, then matter would vanish, for neither half by itself is

[1] *The Metaphysic of Experience*, vol. ii., pp. 130, 131.
[2] *Ibid.*, p. 132.

matter. The smallest bit of matter is made up of two bits of space, which press against each other, stick together, and so produce one bit of matter. Thus ultimately matter is a self-contradiction. It is made up by two pieces of cohering space which taken separately are immaterial. This seems to me the climax of possible thought in this direction. Hitherto, whichever way we looked at it, matter was unintelligible. But now it is shown to be a necessary violation of the law of Contradiction. Any portion of space is infinitely divisible; but occupied space (which is still space) is *not* infinitely divisible. Take, however, one of the smallest possible portions of occupied space, which is called matter (for "matter is space occupied"), and consider it attentively: it consists of two parts, neither of which is occupied; neither of which is matter: these two unoccupied spaces, by pressing against each other, are matter. In other words, two immaterials make one material; or we might express it arithmetically thus, two nothings make one.

The magician who converts empty space into solid matter, who can make $2 \times 0 = 1$, is called Force According to the doctrine of physics with which we are familiar, matter only has or exercises force upon other matter; that is, two pieces of matter are needed for the manifestation of force. The concept of matter just presented to us maintains this duality. The ultimate indivisible atom must consist of two halves, each acting and re-acting against each other. It is force occupying space which makes the atom; but for this there must be two opposing forces, one situated in each half of the atom. But, by definition, without the forces the spaces are empty, have no *matter* in them. Where, then, do the forces come from? Of force, the author says—"Like feeling in the subjective aspect of experience, its specific nature is incapable of definition, and for a similar reason, namely, that it is an abstract, ultimate, inseparable, and unanalysable element of the concrete existents which it contributes to constitute, and yet in that general character as an element is unique, a unique perceptual element which can only be understood by being perceptually experienced."[1] Force, then, is admitted to be

[1] *The Metaphysic of Experience*, vol. ii., p. 133.

ultimately inexplicable, unintelligible. In another place, speaking of matter, he says, "Of this there is no known, or even positively conceivable explanation".[1] "The analysis of matter as an objective and operative reality, when it thus reaches its utmost limits in the conception of it as composed of material real conditions, leaves us with the question of real condition, when put concerning matter itself, or as a whole kind or mode of real existence, entirely unanswered."[2]

I am therefore obliged to conclude that this attempt to show a *meaning* of the term *matter* is as complete a failure as its predecessors. Matter, the abstract concept, remains unintelligible, unknown. Let us understand what we mean by this assertion. Here stand the two opponents, the realist and the idealist; the realist asserts that matter is real, is *known* as a reality; and that we can reason upon the basis of this knowledge; the idealist denies this. Both agree as to the facts of consciousness. Taking the facts as given to perception, all united in one concrete whole, they are for practical purposes intelligible. But are these abstract concepts, space, time, matter, force, when taken separately, intelligible? Do we know that any one of them is in itself a real existence? It seems to me that the attempt to prove that we have this knowledge is a failure. When we take the abstraction *matter*, for instance, we discover that we do not know *what* it is; that we do not know even *that* it is, except as a part or aspect of an indivisible whole. To extract it from this whole, and reason upon it as a given known existent is inadmissible.

THING, CHANGE AND CAUSE.

We have now to consider a trio which seem to be an echo of the preceding triad, matter, motion and force. Modern philosophy shows a distaste for the *thing*, thrusts it as much as possible into the background. But common-sense and the sciences cannot part with things, and even philosophy requires the concept of definite permanent things in order to support the concept of *change*. In physics, masses of matter, the sun,

[1] *The Metaphysic of Experience*, vol. i., p. 395. [2] *Ibid.*, p. 414.

moon, etc., are things. In biology, plants, animals, we ourselves, are living, sentient and intelligent things. The term thing therefore cannot be abandoned; about the difficulty of defining it something was said in a previous stage of our work; to save space, we will not repeat the discussion. Similarly, we can afford to pass over the criticism of *change*. Its difficulties are logical. As a matter of fact, material changes take place; and these seem easily intelligible as redistributions of mass and alterations of direction and speed of motion. The great question as to this group of concepts, and one of the greatest and most difficult questions of philosophy is—what is *cause?* Hitherto, in considering space, time, matter, motion, force, we have kept almost entirely in the region of physics, in order that we might use the least complex illustrations of the terms considered. If we treat *cause* in the same way, it seems to be at once explicable by the previously considered concept, *force*. In all redistributions of matter and alterations of motion the cause is *force* of some kind; gravitation, chemical affinity, electricity, or some other mode of force. This, of course, throws us back upon a philosophically unintelligible concept. But if the notion of physical force were perfectly clear, and it contained a complete explanation of all physical phenomena, we should still find the term *cause* full of difficulties: for it is a term not confined to physics, but equally important in biology, and not less so in psychology and in all those regions which may be called extra-scientific. We cannot now look solely or chiefly to the sciences of inorganic matter, but are compelled to take the widest possible view of things. Although our business in this chapter is the criticism of ultimate scientific concepts, the mention of the term *cause* at once carries us beyond the bounds of science into the larger field of philosophy. In the almost universally accepted phrases, "the uniformity of nature" and "the universality of causation," this concept *cause* is exalted to a unique pre-eminence, as the ruling idea in the visible and the invisible worlds, dominating the material and the spiritual regions alike. Strictly speaking, these universal conceptions are not scientific at all; for they cannot be derived from any science. Nevertheless one cannot fail to

see that there is a great tendency among philosophising scients to assume that the uniformity of nature and the universality of causation are presuppositions of science, and, indeed, self-evident truths which are the proper basis of philosophy. On this account we must make a study of these two universal principles; or, as seems to be more generally held, of this one great principle described in two ways. Whichever of these views is correct, the term *cause* is undoubtedly the most important term in modern philosophy. We must therefore criticise the word and the concept as thoroughly as our space will permit. To treat the discussion exhaustively would require a volume to itself. But I think it will be possible within the space of a few pages to show that among all the ultimate concepts there is none which is at once so ambiguous and so unintelligible as this concept, *cause*.

CAUSATION.

Beginning with a brief historical retrospect, we will not go back so far as Aristotle to discuss his four kinds of cause: formal, material, efficient, final. It will suffice to go back to Locke, who held that cause is that which produces an effect: that is, by *cause* Locke meant an *efficient* cause: this is what common-sense means and physical science also. Cause is an agency, activity, or power which produces an effect. This definition includes physical force, but does not exclude other kinds of agency. We turn next to Hume. He wanted to *see* this cause or force; to have some separate *appearance* of it to his senses, distinct from the phenomena in which it is manifested. As this demand could not be satisfied, Hume concluded there is no such thing. "Upon the whole," he says, "there appears not, throughout all nature, any one instance of connection which is conceivable by us. All events seem entirely loose and separate. One event follows another, but we can never discern any tie between them. They seem *conjoined* but never *connected*. But as we can have no idea of anything which never appeared to our outward sense or inward sentiment, the necessary conclusion seems to be that we have no idea of connection or power at all; and that these words

are absolutely without any meaning when employed either in philosophical reasonings or common life."[1] Hume rejected the notions of power or efficiency—that is, he rejected *cause* altogether. Cause and effect are correlatives: each implies the other: an *effect* is that which is made or produced by the cause: a *cause* is that which produces the effect. Deny connection between the two; hold that the first has nothing whatever to do with the second; you annihilate the concept of cause; it is "absolutely without any meaning".

Unhappily Hume continued to use the word in a new sense, and J. S. Mill put that new sense into new words: cause means "invariable antecedent". Hence the ambiguity of the term "cause," and a vast amount of confused thinking. In experience we are familiar with invariable sequences; and we rely upon them confidently. Day and night, life and death, are invariable sequences; but day is not the cause of night; life is not the cause of death. We might just as well say that in a procession of the following kind—

. . . cart—horse—cart—horse—cart—horse . . .

the last-named horse draws the cart behind him, that cart draws the horse which follows it, and so on—which is absurd, as Euclid would say. Sequence in time and space is not causation. Cause and effect are sequences in time and space, and as such the cause precedes, the effect follows: but this order in time is not causation: it is time-order; that and no more. What we look for in causation, and what causation is still taken to be, is an explanation why the event is what it is. Why does the cart move when there is a horse between the shafts? Because the horse is fastened to the cart; and the horse is a living thing which can move itself and drag the cart. Why does *not* the cart draw the horse which follows it? Because the cart is inanimate matter; and inanimate matter is inert, cannot move itself: let alone anything else. Causation is one thing; succession in time is another thing. Nothing but confusion of thought can arise from giving two wholly distinct concepts one and the same name. And this confused thought is predominant in these presuppositions

[1] Hume's *Inquiry*, sec. vii.

which we are now considering. The uniformity of nature and the universality of causation are confounded together; both are traced to the one concept, "cause"; and "cause" is taken in two meanings at once; as meaning the efficiency of physical force; and as meaning the invariable antecedent in time. This brings the history of the term down to the present day, when it is proposed to discard the word cause, and to call the invariable antecedent the "real condition": upon which something will presently be said.

Passing from the history of the term "cause" to examination of its meaning, we find, besides the frequent interchange in popular speech of the words cause and reason, three distinguishable meanings, or three *kinds* of causes, as they may be called, which are all combined into one by the common term *cause*, whereas it is questionable whether this unification is justified by the facts. These are (1) human agency; (2) natural forces; (3) the sum of all the conditions of an event or effect.

(1) In the concrete use of the term "cause" it is the way of common-sense, as generally in cases where a term is not easily definable, to explain the meaning by adducing cases of its application. No one can give a satisfactory definition of *pain*, but say you mean a feeling such as tooth-ache, and you are at once understood. If, then, the question refers to cause, instances of human causation readily present themselves as exhibiting the needed answer. In view of many effects, the only natural question is—*who* did that? or *who* made that? Human agency is an indubitable *vera causa*. The man is a visible and tangible thing, having physical force at command in his bodily weight, his muscular strength, his motion of fingers, arms and legs. Moreover, he has intelligence to guide his bodily force, he can foresee its effects, can direct it to the fulfilment of his purposes. In addition to all this, man can originate the intention to produce certain effects—effects which in some cases have no counterpart in the world of real things when he first forms the design to produce them. Thus human agency is the most perfect kind of causation which is known in immediate experience. That this immediately known causality should

be taken by children and savages as the type of causation, and that other cases of causation should be imagined as essentially of the same kind, is not surprising.

(2) But further reflection convinces men that the natural forces of winds and waves, rain and sunshine, frost and fire, although causes, are not altogether like human agency. These, then, are put into a separate class, destitute of consciousness and will. Natural forces however produce effects. It is shutting one's eyes to the facts to regard these as mere antecedents in time, having no necessary connection with the consequences which follow their manifestation. Given matter occupying space and exercising force, it is mere absurdity to try to conceive the motion of such matter as utterly disconnected from the observed consequences of that motion. A bullet fired from a pistol breaks a pane of glass: to say that this is a redistribution of matter and motion is true, no doubt: but it is also true that this redistribution is an effect of which the active force of the bullet was the cause. Nevertheless it must be admitted that in such cases the cause in one respect is dubious. That is called the cause from one point of view which is not regarded as the cause from another point of view. A mine is laid and a train of gunpowder leading to it: a spark of fire is applied: a tremendous explosion is the result. The spark is the proximate cause of the explosion; inasmuch as the mine was inert, doing no work, until after the spark was applied. But the explosion was not the effect of the spark alone: the laying of the mine and the chemical qualities of gunpowder are co-operative. When this train of thought is followed up it widens out and prolongs itself interminably. At the moment of the contact of spark and powder there are innumerable natural conditions concerned in the process; the powder must be dry; a drop of rain might extinguish the spark; the powder would have no effect if it were not for the *resistance* of the matter upon which the effect is produced. This resistance or solidity of the matter is connected with gravitation, the force or quality common to all matter. No end can be reached in this direction. Similarly, the application of the spark is preceded by the causes of the spark, a lucifer match or collision of

flint and steel. These again have their causes going back without end. This observation has led to these natural forces being called *second* or *secondary causes.* In the series of these secondary causes no *first* cause can be discovered: nothing which seems capable of being a beginning or origin; nothing which is a *cause-in-itself.* We can never point to the *whole* cause of any effect.

(3) This inability has led to the indication of the sum total of all the necessary conditions, whether known or unknown, as the real cause. This has the merit of logical precision. It amounts to saying that the existence of the whole universe, both in all past time and at the present moment, is the cause of every smallest event in the universe; the falling of a withered leaf, for instance. No one can dispute the truth of the assertion: but it would be folly to pretend that we *know* its truth. It is, at best, an act of faith, as the very terms of the proposition show—"all the conditions, *known and unknown*". And it is clear that such a concept of cause is practically useless to account for any particular effect and for all particular effects together. As an explanation its value is on a par with the assertion that "whatever is, is," and such-like truisms.

If, then, the false identification of causation with invariable sequence is rejected, there still remain serious ambiguities in the term cause which ought to be removed before such a phrase as "the universality of causation" is admitted into philosophy. We have a right to demand: Which *kind* of causation do you mean? Or, if it is alleged that there is a common quality or essence of all three kinds, then we may require that this quality or essence which unifies them shall be somehow made clear to us; either by definition, or appeal to intuition, or by giving examples, or in some other way. Until this is done the phrase is burdened with the unintelligibility and the ambiguity of the term "cause".

To avoid misconception it must be plainly stated that the above criticism of "cause," as of all the other ultimate concepts which have been mentioned, applies only and solely to the philosophical use of them. Their use in common knowledge and in science is not impugned. The ground for this

difference of treatment is that common knowledge and the sciences make no pretence to know everything, to explain everything, to construct a universal theory embracing all facts and all existence. Both common knowledge and the sciences are content to accept some concepts as certain, although they are inexplicable. Of these the most prominent and the most indispensable are the three fundamental certitudes. Besides these all the concepts we have been considering here have their own sufficient clearness and certitude as aspects of experience. In a sense we *know* them as we know consciousness, as we know knowledge, as we know pain. We cannot analyse them out of their context and exhibit them separately; but we can recognise and distinguish them as they arise in thinking upon actual concrete experience. Time, abstract time, and eternity baffle all our efforts to conceive their nature; but the present time and yesterday are not unintelligible: and so with all the other concepts. Human agency, second causes, the chain of causation, are intelligible concepts in practical life and in science. But we also are aware that we have but a *partial* knowledge of the realities to which these concepts point: that in every case, when we pass beyond the actual facts of experience, the concepts carry us into the region of the infinite unknown. They hold good for practical purposes: we do not pretend to decipher the mysteries of the universe by their means. Philosophy is in a very different case. First of all, the philosopher will admit no ultimate concepts, except those which have been proved to be self-evident, if any such there be. Secondly, the philosopher means to explain the universe by means of ultimate concepts, or without them. He is bound to employ an unsparing criticism; and at the same time, whatsoever he himself offers as a basis for philosophy, must be able to stand under a like unsparing criticism. The concept space, though admitted to be inexplicable, *i.e.*, ultimately unintelligible, may very well be accepted as an aspect of a real complex whole, which whole can only be seen and thought of by help of this concept. We secure ourselves against error in our judgments by maintaining the concept unchanged throughout the whole process of our reasoning. When space is conceived as part

of the premises, it is also conceived as part of the conclusion. But all these complex "wholes," about which we reason in practical affairs, are themselves but fractions of the one infinite eternal whole. If in any attempt to understand *that* an unintelligible concept is retained as an essential element of the conclusion, that conclusion is unintelligible: if the unintelligible element is arbitrarily eliminated, the conclusion is illogical.

REAL CONDITION AND CONDITIONATE.

According to *The Metaphysic of Experience*, "a Real Condition" is "something upon the occurrence or continuance of which, in given circumstances, something else occurs or continues which would not do so without it; in other words, and more briefly, as a real *sine quâ non* antecedent or co-existent of its conditionate".[1] Thus "real condition" means antecedent and "conditionate" consequent: "but a Cause is conceived as something much more than this. It is conceived as whatever makes, produces, or effects something from itself, and by some inherent attribute or power of its own, whether original or imparted; thus accounting not only for the existence or occurrence, but also for the quality or nature of the effects produced."[2] Real Condition, then, is not a "first cause"; it is doubtful whether it is even a secondary cause; for though it is indispensable as an antecedent it has not even an imparted power "of its own". Yet the relation of real condition and conditionate is not barely that of sequence; it possesses an "additional" character, "a relation of dependence"; the additional knowledge is "that *if* a desired percept is to continue or occur again something else must continue or occur again independently of it".[3] The sequent being thus dependent upon the antecedent, real condition practically is the same as second cause. This identity is supported by the contention that the only fundamental Real Condition known to us, namely, *matter*, is itself conditioned—it "must be conceived as dependent upon the existence of a real world or worlds which are not material, but the nature of

[1] *The Metaphysic of Experience*, vol. i., p. 327.
[2] *Ibid.*, p. 328. [3] *Ibid.*, p. 375.

which is not positively conceivable by us".[1] I suppose that the author refuses to identify the real condition with "cause," because he denies to real condition power or efficiency. This may result from his opinion that *matter* is objectively known as real, while *force* is inexplicable. We however have seen reason to hold that both matter and force are equally known for practical purposes, and equally unknown as abstract philosophical concepts.

We are left in uncertainty as to whether conditionate is identical with consequent. The conditionate is an effect;[2] but is it also in its turn an antecedent of another consequent? Or, in other words, do condition and conditionate form a chain of causation, each conditionate in its turn becoming a condition? There seem to be two answers. "The whole *de facto* Course of Nature is . . . partially understood by being conceived as an Order of Real Conditioning. . . . Real conditions and conditionates as such do not exist in the Course of Nature, but only facts or objects of perception.[3] According to this, real conditioning is our subjective interpretation of the facts. It cannot give us warrant for the imagination of a universal chain of causation. But again another view is expressed. "When we think of Nature, as we must, under these general notions, we find that a new character is thereby imparted, in our thought as an instrument of truth, to the whole Course of Nature and every part of it. That is to say, we have to think of every existent in it as either a real condition or a real conditionate, or both."[4] Relapsing into the old familiar language, everything is either cause or effect, or both. This utterance leaves the question in a state of uncertainty. Some effects may be in their turn causes, others not so. And this seems to be the final result in this philosophy. It offers us two certainties. *Matter is the real condition of consciousness.* "Consciousness as an existent is the conditionate of really existing matter."[5] "Whatever is positively known as conditioning is matter, and whatever is positively known as conditioned, without in turn conditioning, is consciousness."[6]

[1] *The Metaphysic of Experience*, vol. i., p. 451. [2] *Ibid.*, p. 397.
[3] *Ibid.*, p. 381. [4] *Ibid.*, p. 386.
[5] *Ibid.*, p. 416. [6] *Ibid.*, p. 421.

On the other hand *consciousness is independent of matter*: this is the second certainty. "The specific content of consciousness is independent of material real conditions. It is inexplicable, because an ultimate datum."[1] These apparent contradictions the author tries to harmonise by ascribing the *existence* of consciousness to matter, but asserting that its *nature* is independent of matter. As to human causality, I find no certain utterance. The will is free, and apparently omnipotent in the mental sphere; but he seems reluctant to recognise that man is a cause in the material world. So far as I can see this new phraseology of real condition and conditionate, in the place of cause and effect, is dependent on the alleged demonstration of the analysis of experience, and its argument for the objective reality of abstract matter, which have been previously noticed.

THE UNIFORMITY OF NATURE AND CAUSATION.

Hitherto we have been considering particular concepts used in science and taken over by philosophy. The two grand phrases, the uniformity of nature and the universality of causation, are not particular but universal concepts, which apply to the system and course of nature as a whole. They may almost be regarded as pretensions to *be* a philosophy of the universe. Many people seem to take them as such. Add the "theory of evolution," and the three phrases impose themselves on a wide public as all that is worth knowing, or all that can be known, in philosophy. Seeing that they are all grounded upon causation, some notice of them will be in place here.

These general conceptions of the universe are by no means repugnant to reason. On the contrary, our reason seems to spring forward instinctively to welcome them; and in its eagerness will hardly tarry to demand their credentials; in its spontaneous confidence, declines to inquire whether their authority is limited or unlimited. And yet a serious consideration of these topics is not superfluous. In recent times the concept of *cause* has almost ousted that of *form*. The

[1] *The Metaphysic of Experience*, vol. i., p. 419.

static view of nature is eclipsed by the dynamic. Everything is becoming; nothing simply *is*. And yet form and cause are distinct conceptions. Form is figure, shape, arrangement, plan—the quality of a thing as it is, of the permanent. Cause is that which produces change—the *force* of a thing, its quality as an agent. There seems no reason for ignoring either of these concepts. Morphology is a recognised department of science: in inorganic matter it appears as crystallisation, in biology it is of great importance. Form is *kind* or *species*, the principle of *classification*—one of the tasks of science; once its chief business. The uniformity of nature does not mean that nature has one form: but that in nature uniformities can be discerned. These uniformities are orders, genera, species, varieties—that is, classes and divisions and sub-divisions of classes. Nature as a whole appears to be a system of things in which a governing principle secures a rational formation of kinds or species; each kind exhibiting an internal balance and proportion of parts, and analogies closer and more remote with other kinds. Theoretically, it is possible to imagine every individual thing or being having its place in this universal classification; and these classes to be reduced in number and widened in extent until finally everything whatever shall fall in one of two classes; and as the last step, the two classes shall be seen to be modifications of one order which includes these two largest classes, and, consequently, every being of every kind. This imaginary classification of everything seems to be the ground of the syllogistic way of reasoning. There is nothing whatever to be said against this uniformity of nature. No one nowadays feels hotly about it—whether in attack or defence. We are all agreed that nature is orderly, is uniform: and we are equally agreed that we do not yet know all her various classes, have not yet succeeded in actually getting the perfect and all embracing classification. Moreover, the system or whole called nature we freely admit that we do not know. Sometimes we mean—physical nature only. Sometimes we mean everything—physical and spiritual—and then we confess that we do not know what we mean. Yet the fact that the universe to so large an extent manifests to our minds order,

arrangement, harmony, is significant for philosophy—though by itself alone it does not suffice for a philosophy.

The universality of causation, on the contrary, is a general conception which excites much heated feeling. It is maintained by many with a fervour like that inspired by a religious creed. Looked at dispassionately, the concept of causation seems as congenial to the natural reason of man as that of uniformity. And we know a large number of natural laws, just as we know a large number of uniform classes. Similarly, also, no one pretends that *all* natural laws have been discovered, nor that the one highest universal law which gathers up in itself all other laws as its modifications has been actually discovered and formulated. Here too it is patent that we do not yet know the whole universe—the whole of the facts and all the subordinate laws which the one, highest, all-comprehending law is to unify. Moreover, we do not as yet seem to be able to agree upon what we mean by cause. If we take physical or material force as the real cause of changes, it is impossible to explain the spiritual side of the universe by this agency. Nor can I see how the principle of causation alone, by itself, can account for the order, harmony and beauty of the world: whether we take causation as physical force, or as mere connection of antecedent and consequent. For the actual order of the world, *guidance* of force or of causation seems to be indispensable. At any rate, causation alone does not suffice for a philosophy. There must be something to be changed, or there can be no change. There must be substances, or there can be no laws. Causation may keep the world going—in some fashion: but it cannot begin the world; it cannot set the world there. Evolution, again, may mean merely that everything comes from something which has preceded and leads to something else—which might be as true of a chaos as of a cosmos. Or, it may mean an orderly system of progressive ascent to higher scales of being, which manifests wisdom, design. In neither case is evolution a philosophy; it is but a part of the problem for which a philosophy is required.

It seems, then, that the result of the philosophical criticism of these ultimate concepts of science is hostile to the aim of

philosophy. As we understand philosophy, its aim is to think out some scheme or conception by which the universe as a whole shall be intelligible to the human mind. In this pursuit it must take account of these ultimate concepts: either it must justify them, show that they have meaning, can be understood, and can be used in an intelligible system of the whole; or it must discard them, and explain the universe as independent of them. But the criticism which it is obliged to undertake seems to show that neither can these concepts be understood nor can they be discarded.

And this result seems important for our study of knowledge. These concepts are the final outcome of our abstract knowledge; they are the tools of the sciences; without them we should have no science; and a great part of our common and extra-scientific knowledge also involves them. And yet these concepts cannot be understood, cannot be made intelligible. This seems a severe blow to our knowledge. It exhibits the painful fact that a great part of our surest knowledge is based upon our ignorance.

CHAPTER IX.

RESULTS OF PHILOSOPHY.

WE have now to consider the results of philosophical thinking. So far as its aim, its professed goal, is concerned, philosophy must be pronounced to have failed. This the sceptics consider to be proved. "Philosophy is a mere idea of a possible science which exists nowhere in concrete, . . . for where is it, who possesses it, and how shall we know it?" The dogmatists offer each his own philosophy; but by their diversities and contradictions they cancel each other. Materialism neutralises idealism, and idealism materialism. Hegel finds that all reality is *the Idea*, the climax of thinking or logic; Schopenhauer pronounces it to be *Will;* von Hartmann, *the Unconscious;* Bradley, *sentience* or *experience.* The plain man cannot but conclude that no one of them really knows what it is.

It may be thought that, in classing Positivism, Agnosticism and Spencer's evolution-system among sceptical philosophies, injustice has been done to these theories, which have their positive as well as their negative sides. Without disputing the merits of the contributions of Comte, Spencer, and others to philosophical thought, we must still hold to the opinion that these teachings fall short of being philosophy. For their distinctive tenet is that the ultimate nature of things is unknowable; and thus they coincide finally with Hume and Kant. And it seems to me that, in their view of the unknowable, they have fallen into an error. They suppose that between the knowable and the unknowable a boundary line can be drawn; and that, therefore, the unknowable may be practically ignored as for us "as good as nothing"; thus leaving it open to them to try to construct a rational scheme of all the known and knowable. Whether such a system

could possibly be constructed we need not inquire, for the delimitation between the unknowable and the knowable has not been effected. Nor has the smallest approximation to this division been made. There is not a grain of sand nor a blade of grass in which the two can be separated. All our science is interpenetrated by our nescience. Knowledge and ignorance are not like substance and shadow external to each other; they are rather like matter and space, where matter is in space, but space also is in matter. In the absence of the suggested delimitation, the agnostics belong to the sceptics; their agnosticism is not a positive knowledge, but an acknowledgment that they do not know the secret of the universe.

Speculative philosophy, then, is a failure: but it is not a *barren* failure. These widest and deepest researches of the human intellect have not been wasted. One result alone repays the toil. From the futile efforts of philosophy we have learned that the human mind is incapable of comprehending the universe. Even that portion or aspect of it which comes within the range of his consciousness transcends his capacity of judgment. Awareness of this is itself a kind of knowledge, and shows that the term "unknowable" is meaningless. We are conscious that the reality as it appears to us is not wholly *known;* but if it were totally *unknown*, how should we be aware of our ignorance of it? And as, at present, we do not know knowledge, having only accepted provisionally a definition of it which our investigation so far has proved to be unsatisfactory, we have no meaning for the word "unknowable". Knowledge has hitherto been taken as an agreement with, or conformity to, reality. But now we have discovered that our knowledge and the reality do not agree; the one does not conform to the other. For the knowledge is abstract, and is the thought of a mind which has placed itself in the unreal position of an abstract spectator outside its objects and independent of them. The reality is concrete, and the mind itself is within, and dependent upon, the reality. Moreover, the reality is larger than the knowledge, which therefore does not conform to it. Some knowledge we have, and by this we seem to mean understanding or explanation. By understanding we mean that the object

is intelligible. This sort of knowledge is best illustrated by mathematics. Here we have definitions which we comprehend: intuitions of lines and figures, such as triangles and circles, and of numbers. From these we reason logically, and obtain proofs or demonstrations. In physics, masses and motions cannot be altogether comprehended, but assuming these as given, by the help of mathematics, here also we can attain to intuitions and demonstrations. In chemistry and in biology the data are progressively more incomprehensible, until in psychology we are brought to a deadlock in the doctrine of psycho-physical parallelism. Thus intelligibility has come to the end of its tether, and explanation by the law of causality is no longer possible. We are left standing on a ridge between two inconsistent and irreconcilable worlds, which cannot be reduced to one principle or substance, nor brought into one series of causes and effects. Abstract knowledge thus ends in failure. Yet the unknown still remains present to consciousness and to thought as given fact. Thus we seem to have two kinds of knowledge: a knowledge which is understanding and explanation, and a knowledge which is feeling and fact. Understanding and explanation are satisfactory as far as they go, but they do not go far. Feeling and fact produce sure, irresistible conviction; but they do not afford the intellectual satisfaction which we seek. There is no unity in knowledge.

Philosophy has not extricated us from this unsatisfactory position; but it has helped us to see the position more clearly than before. And we owe a debt of gratitude to philosophy for exposing the immature and false explanations of materialism and other constructions of pseudo-science. It has detected and dispelled ghastly monsters, begotten of scientific imagination brooding over the unknown, such as brute matter, blind forces, chaotic masses and motions, whirling and jarring in chance-collisions till they produce an ordered cosmos. Philosophy, in spite of its failure to achieve an intuition of the reality, or to reason out a scheme of the universe by logical process, has been able to detect the fallacies underlying the false systems. And the most remarkable result of philosophy is this: it holds fast, in spite of its failure, to its conviction

that the reality is a unity—not a rigid immutable unit, but a unity which contains and reconciles differences, a system, or an organism, or a living being—a One which is All, contains All, rules All, an ordered Cosmos, not a chaos. In this ultimate faith in unity all the philosophers seem to agree. Even the sceptics hold to this; for they are sceptics, not because they doubt or deny the ultimate unity, but just because they are unable to prove it; even hold that the proof is impossible. Nevertheless this conclusion does not do away with the conception. It remains as a possession of the human mind: and it is not too much to say that to philosophy it is a *probable* truth.

Before this survey of philosophy is closed, one important observation remains to be considered: the position in philosophy of the three fundamental certitudes. We have seen one or other of these certitudes challenged—by idealism, by materialism—by Hume, by Bradley, etc. And this refusal to acknowledge the certitudes contrasts with philosophy's readiness to accept the presuppositions of science. Nevertheless the disquiet which this observation might occasion us is removed when we perceive its grounds. We can see that the unwillingness or inability to accept the fundamental certitudes and the readiness to adopt scientific concepts both have their origin in the abstract intellectual character of philosophy. The three certitudes are concrete feelings and convictions; they belong to the *real* which philosophy wishes to understand; and its inability to receive them unexplained into its system arises out of that abstractness which is the inherent defect of speculative philosophy. Notwithstanding this reluctance to adopt the certitudes, we observe that philosophers are still dependent upon them. They belong to the reality, apart from which the philosopher has no object of thought. He himself, although he tries to lose his personality in the artificial conception of an imaginary abstract spectator, is the real spectator of the great panorama of the world spread out before his gaze. He is the reality behind the abstract *Ego* of Kant. He is the mind which has the Idea of Hegel; and which is under the law of Contradiction, taken by Bradley as the basis of "absolute" knowledge.

And the "other selves" are the realities which impose upon all the necessity of seeking universal assent to their theories. Nor is what has been called the external world, the world of real things, less indispensable to the philosopher; for this is the objective reality without which the minds would have no other objects save their own thoughts, if they could even have these. Appearances they may be, but they are appearances of the reality: and no philosophy can impugn their reality without committing suicide.

At this point the first stage of our inquiry has come to its conclusion. We have prosecuted our search for a theory of knowledge through the three kinds of thought called common knowledge, science and philosophy. Taking with us the usual definition of knowledge as mental judgments which agree with reality, we found that no obvious difficulty arose in common knowledge or in science. This was natural, for common knowledge for the most part and science altogether are actually and confessedly abstract. They begin and proceed with a tacit acceptance of the fundamental certitudes. Taking these for granted, and temporarily leaving them out of sight, they fix attention upon some one thing, or some group of things, or some general aspect or mode of succession among things, seeking to understand and explain these parts or aspects—not altogether in all their nature and relations, but from an arbitrarily selected point of view, either that of personal interest or of scientific knowledge. And this abstract knowledge holds good under its conditions. But when this knowledge is taken out of its conditions, and an attempt is made to interpret reality by its means, at once difficulties and contradictions arise. In philosophy the insufficiency of this knowledge has become fully apparent. Abstract knowledge is true and useful so long as we do not try to make it the standard of reality, so long as we do not attempt to explain *everything* by it, so long as we leave it resting upon its real basis, the three fundamental certitudes, and employ it only for the interpretation of special appearances and for the gaining of special ends. To inquire into the nature of this knowledge and the grounds of its validity seems to be both

unnecessary and futile. As a matter of fact, we believe it as far as it goes; and though sometimes we err and have to correct our judgments, our knowledge continues on the whole and makes progress. But if you ask for its grounds or for a guarantee of its validity, immediately you are thrown into perplexity: for the abstract knowledge actually rests upon the three tacitly accepted certitudes; and to call these in question is to throw doubt upon it, while to examine them is to pass beyond the bounds of abstract knowledge. Psychology and philosophy crossed these bounds, only to fall into hopeless bewilderment.

Shall we, then, at this point abandon our quest in despair? In that case we should be practically accepting the conclusion of the sceptical philosopher. The heavens would not fall, nor would the earth be shaken. All the facts of nature and of mind would remain as before. We should still have some certain knowledge; we should continue to believe some particular facts, some general laws; and we should enjoy all the particular advantages which result from this knowledge and belief. But our knowledge is incomplete, is infinitesimally small compared with the universe; and it is conceivable that further accessions of knowledge may seriously modify the knowledge we now hold to be true; and perhaps in some important respects may reverse present judgments. Belief, of course, will continue for practical purposes; but, manifestly, in this position there can be no secure repose of soul in any belief extending to the whole of our being and covering all our interests; for in this abstract knowledge and belief the whole is not included. If such is our natural and inevitable lot, to struggle and to repine are equally vain. But why should we give up in despair? Already we have reached to a clear view of abstract knowledge; and to have attained to this is an encouragement to continue the investigation. Moreover, we have not exhausted the contents of human thought and experience. Hitherto, in order to avoid controversial topics, and to keep within the knowledge which has the mark of universal assent, we have refrained as far as possible from entering any region of thought in which conflicting opinions prevail. In surveying psychology and philosophy the transgression of

this self-limitation may seem to warn against its repetition by the spectacle of warring assertions which was presented to us. And yet we have learned something from these regions of opposite opinions. The wide and fruitful fields of history, art, ethics and religion have not yet been explored. Is it not possible that from these some further light may be obtained?

If we elect to go forward, we must leave behind the provisional definition of knowledge hitherto kept in view. It has its fitness in its proper place: it may suit for abstract knowledge, but where we are now to explore abstract knowledge cannot be had, and if it could it would not be true. We shall have to enter regions where the knower is involved in his knowledge as both its subject and its object; where the reality is not outside of and apart from the knower, but on the contrary the two are inseparably interfused. It will be well therefore to disembarrass ourselves of the provisional definition, although, of course, we are unprepared with a substitute. Until our investigation of knowledge is completed, how can we define or describe it? But we want a name for present use; and the name "relative knowledge" suggests itself: for instead of the knowledge of a fictitious abstract knower, we desire to learn what the knowledge of the knower, who is in actual relation with the known, is. And we want to know the relations of the knower to other selves and to the real things. Abstract knowledge started from the perception that "something is or happens," and proceeded to ask questions—what is that something? How does it come to be? What effects follow its appearance? But we have now to begin from the concrete facts—I feel and perceive something; and that feeling and perception again leads to other changes in my experience: and this introduces new questions—do I gain or lose by the change? how can I act so as to get the gain and avoid the damage? The kind of knowledge we are seeking therefore might perhaps be called "relative" or "relational" knowledge. There is, however, an unsuitableness in this term, on account of its associations. Relative suggests "absolute," which has been called its correlative. Now this word "absolute" we have seen reason to regard as unmeaning in connection with human knowledge. Again, the term "relational" is open to the interpretation that we mean by relation "something between" things; whereas by a relation we do not mean a *thing* between two other things; but the fact that the two things affect each other. To avoid misconceptions, I venture to employ the phrase "real knowledge" to indicate the knowledge we have in view; meaning thereby actual knowledge possessed by a real knower of his place in and of his connection with reality in general. The term is not to be used in a dogmatic or assertive way; but must justify itself, if it can, as we go along.

Book II.—REAL KNOWLEDGE.

Part I.—TELEOLOGY.

CHAPTER I.

THE SCIENCE OF ENDS.

MORE than twenty years ago a young metaphysician, who has since become one of England's foremost statesmen, suggested that a science of ends is a desideratum.[1] Nearly a generation has passed, and the desideratum is still unfulfilled. In philosophy teleology is mainly a controversy as to the existence or non-existence of evidences of design in nature. If the construction of a science of teleology were undertaken, I suppose it would divide itself into two parts, natural teleology and human teleology. The second part would be of the greater interest to us, because it would contain some certain knowledge lying outside the troubled regions of controversy. In the absence of the desiderated science, we must consider for ourselves the measure of certain knowledge which we possess in respect to human design and human ends; confining ourselves to actual certainties, confirmed by universal assent.

That human beings act from design, that they have ends which they strive to attain, and in some cases succeed in attaining these, is the matter of fact in respect to which there is no doubt, no dispute. Foresight of a desired end, contrivance of means whereby it may be reached, and the exertion of activity for this purpose, are not confined to human beings, but are observable in the higher animals also. In biology just

[1] The Right Hon. Arthur Balfour, M.P., in *A Defence of Philosophic Doubt*, published in 1879.

this capacity to foresee an end and to use means for its attainment is taken as the test for distinguishing intelligence from mere instinct. To what extent animals possess this intelligence, how far they are able clearly to foresee the end, it is difficult to decide. In our own case action for an end is the normal character of our activity. In some cases we act from impulse; in some cases what was originally designed action becomes transformed, or, one might say, degraded by frequent repetition to reflex and even unconscious action. But the activity which we acknowledge as our own in the fullest sense is activity prompted by intelligent purpose and conscious volition, aiming at a foreseen and designed result. From its manifestation in a child constructing a sand-castle on the seashore to Sir Christopher Wren building St. Paul's Cathedral and George Nasmyth inventing the steam-hammer, human activity is essentially teleological. Nor is this activity confined to the physical world. A mathematician trying to square the circle, working out π to fifty places of decimals, is thinking teleologically, although seeking an unattainable end. We ourselves in our present investigation are engaged in a teleological pursuit, whether we succeed in arriving at any satisfactory conclusions or not. Design is the mark of all intelligent volitional activity. The science of human teleology, if it were undertaken, would find a practically infinite amount of certainties given to it as its subject-matter.

The teleological "end" is not an end in the ordinary meaning. On the contrary, it is not a termination but a beginning: it is the fore-seeing, sometimes the original invention, or mental creation, of some thing or state or event which when first imagined is only thought, does not yet exist as fact. The *end* at first *is* only the imagining and desiring: as a realised thing it *is not* yet, but *is to be* in the future. But foresight and realisation alone do not make an *end* in the teleological sense. The weary traveller or toiler foresees and desires the evening time; but the day's end will come in any case, welcome or unwelcome: this coming independently of our choice and action removes such an event from the class of teleological ends. The *end* in teleology does not come of itself. If not actually invented, brought into being by the

mind, it is at least chosen to the exclusion of possible alternatives; it is also something for which we must use means, put forth effort. The *end* has its origin in some feeling of want; it has its origin in the self as a being with a nature recognised as permanent, able to foresee what will give it satisfaction at a future time; it is formed by virtue of our knowledge of the course of nature as a succession of events determined by fixed laws, and as a succession of events in the midst of which human activity exerts a causal force, making the events what they would not be in the absence of human interference. These are general conditions, apart from which we could not have ends at all. A particular end having been chosen, a calculation of ways and means by which its realisation can be effected is necessary—in some cases the means are not at once perceivable, perhaps they do not exist; they may have to be invented and brought into existence. In every case there must be the will to make use of the necessary means, and the actual putting forth of exertion, either mental only or both mental and corporeal. All these constituents are required for an *end*. More briefly they may be summed up in three stages: (1) the want accompanied by the mental concept of its satisfaction; (2) the discovery and employment of means; (3) the realisation. These three stages cover the history of a realised end. But *ends* are not always realised: and when realised do not always give the expected satisfaction. The failures may be called abortive or mistaken ends. These indicate our need of a science of teleology which shall save us from the formation of disappointing or unattainable ends. Strictly speaking, the end exists from the moment when it is chosen with a determination to seek its accomplishment. Perhaps we may sufficiently define a teleological *end* by describing it as the desire for, and purpose to obtain by our own activity, anything whatever—whether a material thing, or a state of feeling, or an event, or a general alteration in self or the environment. The threading of a needle is an end. The want is to have the needle and the thread united that sewing may be possible. The means is to pass one end of the thread through the needle's eye—a simple but to masculine fingers a somewhat difficult operation. The means having been successfully

accomplished, the end, namely, the threaded needle is realised. With its realisation the end ceases to be: for the essence of the *end* is the choice, the purpose, the resolve. When the needle is threaded that *end* passes away, and a new *end*, the sewing on of the button, takes its place. This is the life-history of an end; it is born from a feeling of want, it dies when the want is satisfied. Other similar ends may come to be—the needle may want threading again: but that is a new end. This extinction of the end by its fulfilment is the general rule. There is, however, one important class of exceptions; namely, those ends which have permanent states of being or character as their objects.

Teleology is the science of human causality, so far as man is a cause by his own will and according to his own design. To discern the line of demarcation between design and instinct or impulse is sometimes difficult. On the one hand, instinct may be made the object of reflection, be adopted or resisted by design; on the other hand, ends which originally were designed may by habit become instinctive. This difficulty will not embarrass our reasoning if we understand by ends only those which, directly or indirectly, involve deliberate choice and intelligent use of means. On this account I hesitate to class as human ends the two great instinctive ends which, if we may ascribe ends to nature, appear to be natural ends, by means of which the whole organic world is kept going: namely, self-preservation and the propagation of the species. No doubt nature seems to have ordained that plants and animals shall act *as though* these were their chief ends; and man as an animal falls under this general law. But just because these ends are instinctive, it seems questionable whether we should include them among human ends. So far as man is actually under the influence of these instincts, apart from his own deliberate choice and purpose, they are not *his* ends—if we stick to our definition. It seems, however, that the natural instincts can be adopted by our intelligent volition; and it is quite certain that by the same intelligent volition they can be rejected. The soldier can prefer death to dishonour; the saint chooses martyrdom rather than the denial of his faith; the suicide casts away a life which he

finds intolerable. Mere continuance of life, then, is not a human end; what we want is life of a certain quality. Similarly, the perpetuation of the species is not chosen by us unconditionally. Man has the animal tendency towards this result; but he can refuse to marry until he has a certain income, or because he cannot win the one woman whom he loves, or in order to devote his life entirely to some other end, which would be hindered by the cares of a family. To nature, if we may personify nature, these seem to be her ends; but to man they appear rather to be means for the attainment of other ends which he thinks out and chooses for himself, such as happiness, knowledge, duty, or some other ideal.

Our previous inquiry led us to the conclusion that abstract knowledge is unsatisfactory and, indeed, partly untrue, because it is not *real*, but a departure from the concrete reality. And because of this defect in abstract knowledge we were led to form the concept of *real* knowledge, which from first to last is at home in, and a part of, the reality itself. So strong, however, is the force of habit that those who have hitherto regarded the objective and abstract conceptions of science as knowledge of the highest and best kind, if not the exclusive type of true knowledge, can hardly at once grasp the concept of real knowledge. We are inclined to exclaim—What, and where, is this real knowledge? Show it to us: give us a sample of it at least. Let us have some concrete instance, that we may judge its merits. This demand is reasonable: and to satisfy it *knowledge of ends* is ready to hand. The defect of abstract knowledge, we saw, is that it consists of mental judgments of an imaginary spectator who sits apart, outside the panorama of the world's ceaseless changes, and calmly pronounces judgments upon these, as though the judge were unaffected by them and had no share in producing any of them. In contrast to this, we observe that this knowledge of ends consists of mental judgments, not of a spectator outside the world, but of an actor in the world. He judges not merely what is, but looks forward to the future and foresees what will be, according as he acts in this way or that. His scrutiny of the scene around him is not satisfied with a clear understanding of things as they are;

he forms his end and proceeds to work in and upon the present condition of things, so as to bring to pass a future state of things which he himself has predetermined. In many cases he fails because he has misjudged either the environment or his own powers: but in many more he succeeds, and the event, when it comes to pass, is what he had willed and contrived that it should be. Indeed, after experience has taught us the extent of our powers, the ordinary routine is that human designs are successful; and it is by this success that we live. Our wishes, it is true, are sometimes extravagant; and our plans and efforts are directed towards that which is for us impossible. And as we easily lose sight of the common routine of success, and are apt to dwell discontentedly on our failures, or even upon the impossibility of getting that which we have never moved hand or foot to attain, this frequency of our success does not receive its due meed of acknowledgment. However, the fact that we have this knowledge of ends is not affected by the proportion of successes to failures. We have this knowledge, and it is real knowledge: it is free from those defects which characterise abstract knowledge. The illustrations of real knowledge are abundant in every one's experience; and are well worthy of careful examination.

We note first of all that the *end* is a new thing, a creation of the mind, which at its origin exists only as a thought in the mind. It is thus an ideal. Abstract knowledge is mental judgment as to what *is:* the end refers to what at present does not exist but is to be in the future; and perhaps will not be after all. On this account the knowledge of ends has been pronounced *merely* ideal. The whole real world of facts and existences has been claimed for science, while the ideal world has been contemptuously abandoned to those who choose to dream about it. This is a great mistake. The judgment should be reversed. The whole world of science is imaginary, ideal, or, as it is now frankly confessed to be, hypothetical. The scient places himself in the imaginary (unreal) position of an abstract spectator outside the world. The man who knows and pursues his own ends thinks and acts in and upon the real world of which he is a member. Even in its initial stage, that which is called ideal,

the end is real—it is a real purpose, and will do something: it will produce effects in the man's life and in his environment. The mind itself is a reality; in its formation of its ends it is prompted by real wants; by natural appetites—sensual, intellectual, aesthetic, or moral; in its efforts to attain the ends it is guided by real knowledge, obtained through previous experience, as to the ways in which it can affect the course of events. Thus from its first inception to its final realisation or failure the end is real—a real state and activity of a real mind in the real world.

We are at present considering knowledge of ends in the general as a kind of knowledge which actually exists. In this, as in all human knowledge, error is possible; and in actual life we have to consider the conditions which must be observed in order to avoid the formation of erroneous ends. Meantime this kind of knowledge, like abstract knowledge, is to be judged by its certainties, and not by doubtful cases, still less by flagrant errors. What we have now to consider is the fact that man can evolve *ends* in his own mind, and achieve them by his own activity. He can in his own thoughts conceive something that has never been seen, nor touched, nor imagined before, and he can produce this thing, make it visible and tangible to all men. Every time we make a journey by railway we are profiting by the *end* which was once a "*mere ideal*" in the mind of one George Stephenson. It is not, however, necessary to appeal to such signal triumphs of the human mind in order to establish the truth under consideration. Only to a few is it given to evolve wholly new ends. Most of us can but choose one or more ends out of those already well known to mankind; but none the less that chosen end is to us at first an ideal and, at a later time, a realised end. Every farmer's boy whose ambition it is to become a good ploughman, every lad who learns to make shoes, has first an ideal and subsequently a realised end.

Between the ideal stage and the realisation of the end there is a period and a process of activity, physical and mental, to which we must devote a separate chapter; this period and process is the employment, sometimes also the

devising, of *means* necessary for the attainment of the end. Leaving *means*, then, for future consideration, let us contemplate the third stage, the accomplishment of the end, its realisation. In most cases this closes the process by the extinction of the end: and this is so even when the end is embodied in some permanent form. For by *end* in teleology is meant the mental design, purpose, resolve, to effect something. The effect once produced, the *end*, *ipso facto*, ceases to exist. The artist may spend a year over a painting; but, the picture completed, his mind is free for other things. This vanishing of the end in its realisation is universal, except in one class of ends; and this is the class called ends-in-themselves. These ultimate ends are marked by two peculiarities: first, they are not of a definite but of a continuous, even of an infinite, character; secondly, they are therefore never, within our experience, fully realised. But they are partially realised, by instalments we may say; and thus the *end* which is never fully realised becomes a continuous end; and does not at any time disappear. Knowledge, for instance, is one of these ends; but the more we know the more we want to know; and we never can attain to omniscience. Yet the pursuit of knowledge is far from being a failure. The seeker for knowledge is richly rewarded for his toil, and ever animated by successes to further endeavours.

In all its stages the *end* both is, and leads to, real knowledge. The first stage, that of the formation of the end in the mind, recalls to memory the early chapters in this book in which *consciousness* was considered. Primitive or bare consciousness, the mere sensation, the mere perception, does not, we saw, rise to the level of knowledge: there must be recognition at least, a memory that I have seen or felt *that* before, to raise the bare consciousness into knowledge of the lowest grade. Now, in the developed mind which has had experience, and is able to form ends for itself, we are at a stage where consciousness is at the same time knowledge. When ants and bees show by their behaviour that they have ends in view and devise means to attain those ends, even adapting means to the end under unusual circumstances, the naturalist sees in these facts unmistakable evidence of intelligence. We,

however, have to do with human knowledge, and in this it is plain that the having an end involves a considerable amount of real knowledge. The *end* is based upon past experience, upon a belief in the permanence and order of things, upon a conviction that one's own activity is a cause in the world. These beliefs, of course, are not formulated into propositions and propounded as articles of faith by the child or the savage. But they exist in the germ even in uncultured minds: the child reasons that what has been will be; that what has succeeded once may succeed a second time; that what has succeeded twice or thrice probably will succeed once again. Some measure of knowledge of self, and of the external world including other selves, is manifested whenever a human mind designs an end. The end may be mistaken; it may be one that is bound to fail; or one that if it succeeds will disappoint, because pain, and not the expected pleasure, will result. But even in these cases the effort to attain the end leads to knowledge. Every such attempt is an experiment; the mind comes into contact with natural forces and human wills; and learns how they behave. Should the end be realised and yet disappoint, this again leads to knowledge —a knowledge only to be gained by experience; namely, that wisdom in the choice of ends is of the highest importance. Thus the more we study ends the plainer does it appear that in these we are in the region of real knowledge.

It seems to me that now in this knowledge of ends we have a full and sufficient answer to those psychologists and philosophers who called in question the reality of the first fundamental certitude, that of the Self. In the atmosphere of abstract knowledge it is difficult to establish the certitude of the Self. For the abstract knower is one who sees objects, but cannot see himself among those objects. His whole mental attitude is unreal; he begins his knowledge by departing from the given concrete reality; he tries to see the world as he cannot possibly see it, and in so trying turns his gaze away from an essential part of the actual facts. Here, on the contrary, in the real knowledge of practical life, the Self is the centre of interest; its wants, its desires, its powers, are in the foreground and command attention. I do not pretend that thus

we can arrive at a definition of the Self which shall be exact and complete, like the definition of a circle or triangle, but we can indicate the Self as a reality which can be and is known with a clearness and a certainty exceeding that of any mere abstract definition. The Self is the being which within and for itself forms, by its own intelligence and volition, purposes or ends, to accomplish which it devises means, and then uses these means to bring the ends into existence. I do not say that the Self is only this: we have no exhaustive knowledge of the Self: but the Self is this; and being this is altogether raised above the mere stream of events, which is called experience, and by some has been regarded as the totality of being. The Self is more than its own experience. The stream of experience is always running on and on, but it exists actually only in the present moment. The Self in the act of forming its *ends* grasps the past and brings knowledge of the past into the present; being itself the unity in which past and present are one reality. More wonderful still—in forming *ends* the Self outstrips time and enters the future, places itself there, and wills what is not yet in existence. And that this is no mere idle indulgence of imagination is proved by the realisation of these ends—not rarely, not once or twice in a hundred or a thousand years, but normally, repeatedly, oftener than one can count. True, there are failures, many failures. The Self is not infallible, is not omnipotent. But it seems to me the strangest thing in the world that psychologists and philosophers should have found the least difficulty in recognising the Self, in perceiving its clear and certain reality. In this respect common-sense has shown itself wiser and more clear-sighted than philosophy; for in the everyday practical human life there never has been any doubt of the Self.

CHAPTER II.

ACTION FOR AN END.

NO end is realised without designed activity: for this is required by the nature of an *end*. There may be apparent exceptions. A man resolves to kill his foe, and finds him dead of apoplexy. The discovery may be a relief or a disappointment; in either case it is not the end which he proposed, but an event which frustrates the execution of his purpose. Activity to produce an end is the use of means: we have now to consider the nature of *means*. Means are of two kinds: the mental or psychical and the physical. Of these the psychical are the more important, because the discovery and selection of the physical means is psychical; therefore the psychical means cannot be absent; on the other hand, the means may be only psychical, as in solving a mathematical problem and in our present inquiry into the nature of knowledge. Yet the physical means, which are necessary to produce a result in the material world, demand consideration which will bring to light some instructive facts.

There is a class of ends the teleological character of which is liable to be overlooked: these are the immediate and transient ends, of which hundreds and thousands occur every day of our lives. In these cases the whole process is all but instantaneous. The end is achieved almost simultaneously with its inception; the use of means hardly rises into consciousness; perhaps does not enter into consciousness at all. And yet close observation reveals the teleological character of these activities. I cannot thread a needle without attention to my end and consciousness of my efforts: a sempstress threads her needle without thinking about it, or nearly so. We, all of us, continually accomplish ends with less attention and conscious effort than the woman requires for threading

her needle. She is at least aware that a fresh supply of thread is wanted. Consider now this case. I want to verify a quotation: I rise from my seat—walk across the room—take a book from the shelves—turn over its leaves—find the page—see the sentence wanted. My conscious end is attained. Let us now look at the means. The rising, the walking, the taking down the book, the turning over the leaves, are four distinguishable actions, each of them purposeful, each of them requiring the use of means. Again—I am writing: my end is to have my thoughts in black and white that the printer may see them. While I write I do not consciously watch and direct the process: it seems to go on of itself: yet each letter requires some appropriate guided movement of the muscles. In these cases, when I examine them carefully, I observe an interesting fact. I know what I want to do; I know *how to do it;* but I do not know *how it is done.* When I rise from my seat there is the will to move, and there is motion; but how the will produces the movement, and what muscles are moved, I do not know. If I watch myself writing I observe that the pen goes up and down on the paper; but what muscles are employed in each little twist and turn, and how it is that I can go back and cross the t's, I do not know. Here is a kind of knowledge which does not seem to have received the attention it deserves. There is no word to express it—let us take the phrase already used, *knowing how to do it.*

All the ordinary activities of common life are instances of this kind of knowledge—walking, talking, reading, writing, dressing, undressing, eating, drinking, etc. When such knowledge is universally possessed it escapes attention altogether; but when it is possessed only by special classes of men it has been noted, and then it receives the name of *skill.* Each art, each craft, every special occupation and pursuit, has its special activities which become as familiar to the artizans as walking and talking are to us all. We watch with admiration the skilled musician, the good shot, the accomplished fencer, marvelling at the rapidity and accuracy of their performances. What we observe is the achievement of an end, by means of a number of bodily movements executed rightly, swiftly, seem-

ingly without effort. A spectator, noting the rapidity of the movements, supposes that the performer is not conscious of each separate detail of the motions but acts from a kind of instinct, doing the right thing at the right moment, spontaneously and automatically, rather than by conscious mental attention. Like ourselves in the activities which are common to all men, the skilled artist or craftsman knows what he wants to do, and how to do it, but not how it is done. Although language does not supply a term to describe this kind of knowledge, it recognises its existence in such statements as "I know French," "I know shorthand," "the Boers know how to shoot," etc.

What is "this knowing how to do" this or that? It involves the movement of limbs and organs of the body. In different cases different parts of the body are prominently engaged. The legs are not directly concerned in writing, nor the fingers in singing. Threading the needle occupies fingers and eyes. If I rise from my seat the whole body is moved, but I can rise with my eyes shut as well as with my eyes open. To some small extent the relations between the ends to be attained and the movements necessary to attain them are known. But, as matter of fact, this part of the knowledge easily drops out of sight, tends to disappear from consciousness. The rule seems to be that the more perfectly we know how to do it, the less attention do we pay to our bodily motions, and the less conscious we are of their existence. If in any case of a somewhat unusual character, attention is demanded and effort put forth—that attention is not directed to the bodily organs and limbs so much as to the end which one desires to achieve. To hit the mark, we look at the mark, not at our hands holding the gun: to write well, we fix our attention partly on the copy, partly on the letters we are forming. In all cases such as we are considering, there is no doubt that the ends are effected by the right adjustment of bodily movements, which must vary with great minuteness and delicacy. These adjustments of eyes, hands, fingers, etc., are effected by *internal* movements which are invisible to us, many of which do not enter into our consciousness. Of what, then, are we

conscious, and what do we know of this "knowing how to do" it? It seems that in a vast number of cases we are hardly at all conscious that there is any use of means; that when we are conscious that bodily movements are employed, we know hardly anything more than that we will to achieve the end, and thereupon perform the necessary action. When I walk across the room I am conscious of the movement; and by voluntary attention I can notice the alternate movements of my legs. The internal machinery is hidden within the body; it works noiselessly and without perceptible friction. Personally, I know little or nothing about it. As a matter of fact, I can walk, and talk, and write, and do many other things. I know well enough *how to do* them; but I certainly do not know *how they are done.* I am ignorant of the means; and do not intelligently guide the machinery.

For the explanation of the mystery we must go to the biological sciences. These demonstrate to us a system of internal motions within the body. There is a complex machinery consisting of bones, sinews, muscles, nerves, nerve-centres and brain; and within the brain are divisions, the fore-brain, the seat of intelligence and will, the middle-brain, the cerebellum, and the medulla which regulates involuntary movements. The spinal marrow also contains nerve-ganglia. It is ascertained that when a movement takes place there is (1) a nerve current from outside the body to a nerve-centre, in the spinal cord, or in the medulla, or in the cerebellum, or in the middle-brain; (2) this nerve-centre having received notice of what is going on at the skin-surface sends back another nerve current to the muscles concerned; (3) this second nerve current leads to contraction of the muscles and consequent movement of some part of the body. All this may, and often does take place without intelligence and volition: it is what is called reflex or involuntary movement; as, for instance, when the fingers come into contact with something hot they are instantly withdrawn, and when the eyes are threatened by a blow the eyelids at once close. In such cases we are aware of the external movements; but we do not will them—indeed if we try to will that they should *not* take place, it is extremely difficult, if not impossible, to

prevent such movements. We read in Roman story that one Mutius Scævola overcame the difficulty and kept his hand in the fire; but such cases are rare. Passing from involuntary to voluntary movements, the explanation runs thus: intelligence and volition are functions of the fore-brain. In a case of speech, for instance, some one addresses a question to us; (1) the ear receives the aerial vibrations; (2) a nerve carries these to the middle-brain; (3) the middle-brain transmits the vibrations to the fore-brain which understands their meaning and thinks out the answer; (4) the fore-brain then wills that this answer should be expressed in audible words, and by nerve-current gives the order to the part of the middle-brain which manages the speech machinery: (5) this middle-brain office sends nerve-currents to the tongue and throat organs, and these move so as to produce vocal sound. Here we have a mixture of actual knowledge and of hypothesis: no one has *seen* the nerve currents; no one knows exactly what goes on in the brain. But the scientific account of the case is in part certain, and in part probable, and we unscientific people receive it gratefully and trustfully.

To apply this explanation to our knowledge of *how to do* things, we must have recourse to physiology. This tells us that the reason why we are able to move our limbs so as to perform the movements needed for walking, talking, eating, reading, writing, etc., although we do *not know how it is done*, is because in these cases the outward impressions send their message to the fore-brain, whereupon the fore-brain wills the end and transmits the order for its execution to some other part of the brain or nervous system, which part then executes the order, without sending any nerve current to the fore-brain. I *will* to walk: the nervous centre which is connected with the legs receives its starting impulse from my volition; but when the machinery is once in motion it works of itself: right leg forward, left leg forward, the swinging motion goes on automatically. If I attend to the matter at all, I observe the feeling of the ground by the right foot; then the swing forward of the left foot, which in its turn feels the ground; and is followed by the forward movement of the right foot. I am conscious of the external motions:

but of the internal motions I am not conscious. I know how to walk; I know that I must will to walk, that I must make an effort; I do so, and I walk. But as an unscientific individual, I do not know *how* it is done. Physiology informs me that the alternate movement of the legs is effected by the nervous machinery, and that I do not know how it is done, because the nervous action is reflex: it goes from the feet to a reflex nervous centre, and back from that nervous centre to the leg muscles, without sending up a nervous current to the fore-brain, which is the seat of my consciousness.

But how do we know that *we* have anything to do with this activity of the legs in walking, of the fingers in writing, of the tongue in speaking, etc.? All this, it may be suggested, is purely mechanical and the *ego*, the mind, has no share in it at all. In regard to some internal movements this is true. In eating our food, we put it into our mouths and swallow it. After that our share in the business is done. The food passes down into the stomach; it is digested; part is converted into chyle; part is passed through the bowels and ejected. These changes are effected partly by chemical activities, partly by muscular movements: physiology tells us that there is a special nervous system connected with these operations, of which system we have no consciousness. May it not be so in the case of the external activities, walking, talking, and the rest? If it is so, the fact remains that we are conscious of the *external* activities, that these are obedient to the control of intelligence and will, that we know how to do them; *i.e.*, how to write, how to speak, etc. And for further information we may turn to psychology, or without applying to science, we can learn the main facts from our own experience and observation. The newly born babe can suck the breast or a bottle; but that is its only external activity which is practically useful as means to an end. It has to *learn* to walk, to guide its hands to grasp things, to speak, and to perform all the activities which the boy performs automatically. The external part of this process of learning can be observed. Better still, in our adult life we can observe similar educational processes, while we ourselves pass through them. In learning a foreign language,

new vowel and consonantal sounds have to be acquired. We listen to the sounds; we try to imitate them; at first we make poor attempts; but we go on trying, and by degrees the ear catches the sounds more clearly; the organs of speech imitate more closely; until "practice makes perfect," and we have no more difficulty in speaking the foreign language than our mother tongue. Or, notice the common and amusing spectacle of a novice learning to ride the bicycle; mark his great and awkward exertion in getting into the saddle; his speedy fall to the right or left; his wobbling progress when he can sit on the machine for a second or two; his violent twists of the handle-bar as he swerves from side to side. So he tries and tries and tries—until in a week or two he has got command of the machine, and proudly rides along, with a stern look of care upon his face. Again see him after a season; now he mounts his iron steed carelessly, and rides off at ten miles an hour speed, waving a farewell salute with his hand, as unconcernedly as though he had never had to sweat and wrestle to gain this facility. What has happened? He began with an end, an ideal: he would learn to ride. He knew that for this purpose there must be suitable co-ordinated movements of arms and legs: he tried to make these, at first in vain; but by degrees the movements became easier, in the end they became natural and easy. His end was achieved. What changes have taken place? None in the external machine—the bicycle; none, so far as can be observed, in the man's body; he has the limbs he had before and no others; there is no reason to think that internally new muscles have been developed. No doubt exercise does develop the muscles, and perhaps modifies their forms: but an adult who can run, ride, swim, wrestle, play football, etc., probably has fully developed muscles. The psycho-physical hypothesis is that new brain-paths, new channels for the nervous current have been formed. At first, the fore-brain was intensely active: desire, volition, effort, determination to persevere, were continuous: there was also thinking of a confused sort: the novice thought of preserving his equilibrium, of giving enough and not too much pressure to each handle as

was required by the position, of moving his legs alternately and with equal force. This brain-activity is supposed to affect the arrangement of the nervous matter. When at length the various movements are performed more steadily, the nerve-currents begin to be regular; and then, by constant repetition, the cells and fibres get a *set* in the direction of the currents. After a time, the brain-action is comparatively easy. The rider has only to think of his end, and to will: the fore-brain sets the current going, and the inferior nerve-centres send down impulses in the right direction. In the last stage, when the cyclist is an accomplished rider, the greater part of the process is automatic; this is because the inferior nerve-centres have become so perfectly adapted to the work that, when the start is once given, they act of themselves in the reflex way. Now the cyclist is no longer conscious of this internal mechanism—I should rather say he is no longer conscious that anything is going on inside of him—he never was conscious of nerves and nerve-currents; but he *was* conscious of effort, exertion, struggle in his body: this inward feeling now exists only on occasions of extra strain. In his perfect development as a cyclist he wills to ride, to go fast or slowly, to turn to the right or left, to pedal or to coast; and what he wills to do he can do: he knows how to cycle. In respect to this psycho-physical explanation, it is a scientific hypothesis which seems to be highly probable; and we all accept it as such. But it is, of course, abstract knowledge, and does not belong to the real knowledge we are now studying. And assuming it to be correct as far as it goes, it leaves the whole fact a mystery at present unpenetrated by a gleam of suggestion. What goes on in the fore-brain; the connection of the fore-brain with the reflex-centres; how it is that this can be modified; the nature of the nervous current; and how all this nervous system is connected with consciousness, intelligence and will, remains unexplained. The transfer of the control of the movements from the fore-brain to the inferior ganglion reminds me of a step in the evolution of the steam engine. In its early days, before it had been taught cotton-spinning, or had evolved the locomotive form, the steam engine served the humble purpose of drawing up water from

mines; but it could not do even this without help. The steam admitted into the cylinder lifted the piston-rod into the air and so raised the horizontal beam; but this steam had to be got out of the cylinder that the piston might descend. For this end a valve was made, with a handle to open it; and a small boy was stationed there to lift the valve at the proper moment: the boy was virtually a part of the machine. How many boys performed this monotonous task for how many months or years, history saith not. But at length came an intelligent boy who perceived that instead of constantly watching the rising and falling beam, and himself lifting the valve to let the steam escape, he could make the engine do this piece of work, and free himself from the trouble. A bit of string connecting the beam and the valve solved the problem. The rising of the beam lifted the valve; when the beam descended, the valve closed again. In some way or other, by a mechanism the details of which we cannot perceive, nature relieves the fore-brain of its irksome task of controlling every limb-movement; whether by connecting fibres, or by-paths in the nervous matter along which nerve-currents can pass without being under the necessity of first reporting themselves to the fore-brain to ask where they are to go next. How it is done we do not know. Our consciousness of the process is confined to the external part of the movements; namely, to the contact of the limbs with the machine, in cycling; to the contact of the fingers with the keys, in learning to play the piano. The mind sees and knows outside the body, and is occupied in attending to the points of junction, where the body and the external world meet.

Having thus described the facts, we have now to consider what real knowledge we possess in respect to action for an end. In the first place, let us note that between the *real* and the *abstract* knowledge there is a marked distinction. In describing abstract knowledge, scientific writers easily fall into personification: it adds liveliness to the style; sometimes seems to make things more intelligible; and somehow there is a natural tendency in the human mind to "animism," behind the indulgence of which seems to lurk an impression that perhaps there is a measure of literal truth in it after all.

I myself have not, in the above descriptions, put a check upon this tendency: I have let myself go, have freely adopted scientific phraseology, and have used some of my own. Nature, the fore-brain, the reflex centres have been personified; or to use a new word employed by an American writer, *reified;* that is, have been spoken of as real separate entities or things. This anthropomorphic language is excusable, and even useful; if we do not make the fatal mistake of supposing that it is *real knowledge*, or even abstract knowledge. A metaphor is a metaphor: it puts one thing for another: the two things are *not* the same. Nature is not a feminine divinity: the fore-brain is *not* a thinking individual: a nervous system is *not* a telegraph-exchange office. We may make use of metaphors and analogies to help ourselves in forming concepts and expressing them. But if we abuse this licence, and regard these metaphorical expressions as certain knowledge of actual concrete facts, we fall into error. Let us then examine the knowledge which we possess; and clear our minds, as far as possible, from all illusory imaginations.

Physiological science is abstract knowledge. So far as it is knowledge, it is to be thankfully received by those who are not scients. Exactly where the line between knowledge and hypothesis is drawn in physiology, we do not know. But one thing we know—that is, physiology is not the source of our knowing how to do things. The science gives us much deeply interesting information about our internal machinery; but this information does not enable us to guide and control the machinery for the achievement of our ends. The physiologist himself, if he wants a dinner, must become huntsman, or fisherman, or farmer—unless he can get other men to supply him with food. And to be a successful huntsman or fisherman or farmer, he must learn how to do it, just as other men do—by trying to use his limbs and bodily organs in the right way—by imitation and by practice.

The real knowledge which we have brought to light by this examination of "knowing how to do it" is, for our inquiry, of great importance. First, we observe that we all possess a kind of knowledge which is real, not abstract. It is so real, so unlike abstract knowledge, that it cannot be put into words.

There is no name for it. That is a small matter—but it is not a small matter that this kind of knowledge does not consist of abstract concepts. It cannot be expressed in language; it cannot be communicated by language. It is not the knowledge of a mind separated from its body, separated from the material world, regarding the whole *ab extra.* It is knowledge possessed by a real self in actual contact with the material universe. And even the real self does not know this real knowledge which he himself has, in an abstract way. Even with all the light shed upon it by physiology, it is still a mystery. How is it that a human mind can educate and train a human body to do what the body originally is utterly unable to do; and to do it so easily that it becomes like a natural motion? We know that we can do this. The being we call the Self can teach his body to perform adjusted and co-ordinated motions—the nature and complexity of which he himself never knows; but by means of which he can in various ways adapt his actions so as to attain his ends. It is one of the modes of human causality.

While man learns to adapt his own body to his purposes, he is all the time learning the nature of the external world; and becoming able to subdue and use it also for the accomplishment of his ends. In this practical dealing with nature he gains real knowledge of real things—of a kind different from that of abstract science, inferior in some respects, but superior in other respects. No abstract knowledge is so exact and so vivid as the real knowledge of concrete cases in face to face presence. Science deals with the general, with the order and the class and the variety; it stops before it reaches the individual. Science cannot count, cannot describe the individuals. But of this personal and particular acquaintance with nature we need not speak here. We must turn our attention to the important topic which has been suggested—human causality.

CHAPTER III.

HUMAN CAUSALITY.

THE term "cause" being, as we observed in the former book, ambiguous, and thus the source of much confused thinking, it might seem wiser to abandon it, and, in its place, to speak of human *agency* as a known reality. But by so doing we should lie open to the charge of evading grave difficulties by the cowardly and useless expedient of shutting our eyes in their presence. Every one admits that man is an agent and produces effects; he is a cause, but it is also confidently asserted that he is a *caused* cause, a mere link in the chain of universal causation, whereby his freedom is called in question, and his feeling of responsibility pronounced an illusion. "All that happens, great or small, happens with like necessity. It cannot happen otherwise than it does. Past and present action is determined; future action is predetermined. . . . Predeterminism of what is to happen not merely excludes free will, it seems to make will superfluous. . . . The universal being and course of events is one; this unity is involved in its very conception. . . . William James asks whether the world would be less rational if such actions as the choice of a street were left wholly to caprice, and he thinks the question cannot be answered. Yet we may decide this with perfect certainty. Infinitely small as imagination may make the difference of such a world from ours, for the understanding even an infinitely small variation from the law that every event is determined from the universal law of causality would be a miracle infinitely great. . . . A single element of irrationality, an exceptional event that is uncaused must in its results make all nature irrational, as a very little leaven may set a whole mass of organic matter in fermentation. Nature could not exist with a freedom not subject to

law."[1] This unflinching logic would put an end to all thinking by destroying every motive for thought, if it were not itself annihilated as a practical power by its own rigidity. Therefore it is not surprising that the author of this thorough-going assertion of determinism arrives also at the apparently contradictory view, that "man is not merely a product of the process of nature, but at the same time an independent part of nature. . . . Just because his action belongs to the general order of nature, the future of things is in part determined by his acts."[2] This second quotation grants all that the believer in freedom asserts: but the question is—how can the assertion of freedom be harmonised with the dogma of determinism? I am afraid that neither Riehl nor any one else has constructed a bridge across the chasm between the opposing views. It seems to me that the more rational course is to inquire whether we are forced to accept the extreme views which are so hard to reconcile.

Human agency as a fact is not in dispute. Still it is well to ask two questions: how do we know that we are causes? and what do we mean by cause in this case? Knowledge rests upon the data of consciousness, of which it is the interpretation. How do we know that matter possesses energy and exerts force? that there are such things as matter and force? By the evidence of our senses interpreted by a constant experience, the interpretation being not only that of the individual, but also that of the human race. Similarly, we know that we possess and exert causal power, by the universal interpretation of a constant experience. Human causal agency is one of the fundamental facts of experience; equally fundamental with the facts of matter and force. No reason can be given why the material causality should be regarded as of greater certainty than the human causality. Both rest upon the same kind of evidence: if there is any shade of difference, it seems to be in favour of human agency, which we know more intimately, and which seems the more intelligible of the two. What do we mean by human causality? We mean

[1] Riehl, *Introduction to the Theory of Science and Metaphysics*, translated by Fairbanks, pp. 229-232.

[2] *Op. cit.*, p. 339.

that it is an exertion of energy which produces effects. A stone thrown against a pane of glass produces effects. The boy who threw the stone also produces effects; first the swift passage of the stone through the air, and thus the breaking of the glass. Here the difference between the two meanings of cause comes to light. In the motion of the stone we see energy in its manifestation as active force: this energy can be traced back to the energy in the form of active force manifested in the muscles of the boy's arm: this again to the whole store of energy in the body which is maintained by the consumption of nutriment by the body: this nutriment, his food, has its latent energy, as coal and water in the steam-engine have their latent energy which, manifested in the form of fire and steam, moves the engine. When the boy moved his arm a certain portion of his bodily energy was employed, which can be traced forwards in the movement of the stone, and backwards through the muscles to the food, and in both directions further and further, till it is lost to view in the infinite whole of matter and energy. This is the infinite series of secondary causation. Does this analysis fully exhaust the phenomenon? No: for we regard the boy as responsible for breaking the window. He *originated* the action. If the stone had been a bit of meteoric matter falling from the sky, the chain of causation would carry us back in the infinite series without a break; but at the boy we stop. He is a first cause, fully capable of commencing a series of effects, a series of effects which would not have existed but for his causal activity. Therefore we make him pay for the broken pane, by stopping his pocket-money; or chastise him to deter him and other boys from like destructive activity.

Let us, in the first place, consider why we regard man as a first or originating cause. We observe at once that here there is no absolute origination. We do not begin with abstract concepts: we do not start from an imaginary point of view whence the whole universe is supposed to be comprehended at one glance: we take our stand where we are in the midst of things and ourselves parts of the whole. That is, our knowledge of human causation is real, not abstract, knowledge. Man is taken as he is known to be, a real complex

unity, capable of originating effects. The earliest efforts of the infant appear to be instinctive or impulsive; later they are seen to be imitative and tentative. But our conception of man as causal is grounded on the known powers and actions of the developed being. And we take man as he is, not an isolated unit, but in his relations to other selves, and the external world. He is a cause, not of the whole, nor apart from the whole, but within the whole. We regard him as a first, that is, a real cause, because he produces changes in things, and new things, which changes and things can be traced back wholly to him and his causal action. Even a mere imitation by a child is so far a new thing wholly traceable to the child, that but for the child it would not exist: in the child there is the perception of the imitated act, the will to imitate, and the physical force requisite, which produce the imitation. Human causation, however, is more perfectly illustrated when the very end itself is entirely original, as when Watt conceived the design of constructing a machine to utilise the force of steam which he saw could raise the lid of a kettle. In no case is there absolute origination. Man does not bring himself into being, nor does he create his world. But the totality of things being as it is, man can bring into existence entirely new things, which can be wholly attributed to him as a unity of energy, intelligence and will. In one respect human causality incomparably excels mere physical causation; for it contains not only guidance of force, but a rational explanation of that guidance. The end is foreseen, and the guidance is intelligently directed to the end. In cases where the end is not merely foreseen, but positively originated, or, as we say, invented, the causality reaches its climax. Any one can imagine men flying in the air like birds: possibly some of us may live to see the wing-machine which has not yet been invented. We need not enter further into the details of human causality, the varieties of which are practically innumerable.

The dominant idea in human causal agency is *origination.* Man being what he is, and this world being what it is, things, and changes in things, and series of changes, can be traced back to him as their *cause.* Cause, in this case,

is not mere force, nor mere conditions, such as matter, space, time, etc.; it contains all these, but it is more—it is also the rational ground, the reason *why* the force is exerted, *why* the end is sought. For example, man makes bricks and builds himself a house. Why? Because (by *cause*) of his need of shelter from rain, cold and sunshine, of a place of safety against beasts and thieves. The dominant idea in the law of causation, when that phrase is used in the physical sciences, is *regularity* of change. I want now to compare the two concepts of cause; but this is somewhat difficult to do, the scientific concept of cause being nowhere authoritatively defined, and quite contradictory descriptions of it being offered to us. Huxley says "In addition to the bare notion of necessary connection between the cause and the effect, we undoubtedly find in our minds the idea of something resident in the cause which as we say produces the effect, and we call this something force, power or energy".[1] Karl Pearson denies both force and necessity. "Scientifically, cause as originating or enforcing a particular sequence of perceptions is meaningless. . . . Causation is uniform antecedence."[2] Lotze taught that "the conception of efficient causation is indispensable for our apprehension of the world". It seems to me that Huxley's and Lotze's view is the more generally accepted, and also more intelligible; although Comte vehemently protested against it. This prevalent view appears to be a fusion of the two ideas of efficient cause, and invariable antecedent. In any view of physical causation, the ideas of order, law, regularity, are evidently the predominant ideas. As to origination, that seems to be entirely excluded by the general agreement that the cause, whatever it is, itself is an effect, it had its cause. Thus the causal series is always infinite. Desiring to take the most favourable view of this causation, I think we may say it combines the ideas of necessity, regularity and equivalence: necessity—for every effect must have its cause; regularity—for the same cause (under like conditions) always produces the same effect; equivalence—for cause and effect (action and reaction) are

[1] *Life of Hume*, p. 126. [2] *Grammar of Science*, pp. 153, 156.

equal. It must be confessed that this theory is largely ideal; and that it would be very difficult to apply it to a great many actual cases. Real facts are so complex, real conditions are so continually changing, that some boldly deny the possibility of two exactly similar sequences occurring anywhere or anywhen. Be that as it may, I think we do physical causation full justice if we regard it as ideally constructed, on the basis of mechanical conceptions, supported by the theory of the Conservation of Matter and Energy. Let us accept this view as the infinite series of cause passing over into the effect, a process in which nothing is lost, no matter perishes, no energy ceases to be: for the effect in its momentary existence contains all that was in the cause; and again, in its turn is cause, of an effect equal or equivalent to itself; and so on, for ever and ever. Clearly this causation is not the same as the causation of human agency. The universal physical causation has no beginning: human causation is a beginning. In the infinite series, the cause ceases to be when the effect has come into being: man as a cause is permanent: he does not pass away in the effect but continues to produce more effects. In his case, the effect is not equal to the cause: there is no common measure between them: commonly, man the cause is greater than a host of the ordinary effects which he produces: but now and again a man appears who produces effects which appear far to outweigh his individual importance. Moreover, every man is always causing one general effect of supreme importance: every man is always developing, or working out, his own character: man is the cause and is the effect. In this case cause and effect are unequal: for the man develops: he becomes wiser, stronger, more harmonious, more *one*. With these two so essentially diverse concepts before us, the puzzle seems to be how to account for their having come to be called by the same name. Man is not a cause, in the serial sense of the word. The serial cause is not a cause in the sense in which human agency is a cause. Abandon the word "cause"; speak only of human agency on the one hand, and the natural order of events on the other—what conflict or discrepancy is there between

the two? We know to some extent, and where we do not know, we assume that there is a natural order of events. We know that man, to some extent, changes the course of events by his agency. There is no contradiction. The natural order in its entirety includes man: but man, though a part of nature, is also a power in nature: and nature *with* him is different from what it would be *without* him. All this is good common-sense, in no way opposed by science, and approved by philosophy. Where then is the fault from which so much bewilderment has arisen? Is it a mere verbal ambiguity? I think we must go deeper than that. These phrases, the universality of the law of causation, the uniformity of nature, or more briefly, the reign of law, and similar expressions, are the outcome of an informal and uninstructed philosophising—an attempt to bring the whole universe and all its contents into a unity by the assertion that every thing, every fact, every event is subject to the law of causation. The law of causation being thus made absolute, and the one ultimate truth of all existence, it seems impossible to find in the universe any room for human agency—except as a caused causality. Theologians, who insisted on the necessity of attributing every being, and every action of every being to the foreknowledge and decree of the Deity, were similarly compelled by their dogma to deny free-will to man. In both instances the error seems to lie in the assumption that we have knowledge, where we are profoundly ignorant: this false imagination of knowledge leading on to the denial of real knowledge of the plainest and surest facts.

The universality of order, the universal law of causation, belong to philosophy, not to the sciences. They are expressions of belief—not utterances of knowledge. As a matter of fact the world of our experience contains disorder as well as order, the lawless as well as the obedient to law. All that men know of the order of nature is contained in the sciences: and these are only fragments—visions of orderly arrangement and of motions (actions) guided to prescribed ends (called natural laws), which the mind sees in special departments, astronomy, chemistry, etc. The attempt to combine all this

special knowledge in one view, and to supplement its deficiencies by theory is the task of philosophy; and this has not been satisfactorily completed. The bare conception of universality of causation is not by itself a philosophy: at most it is a contribution towards a philosophical theory, an element which has to be taken into account in an endeavour to comprehend the whole. Causation, as Schopenhauer pointed out, is the sufficient reason of *becoming*, not of *being*. It accounts for events or changes, not for beings or existences. Taken in its fullest sense, it asserts a continuity of all that happens. Every happening arises out of preceding happenings, and leads to succeeding happenings. Assuming this to be absolutely true, it leads to a conception of the universe which, taken by itself as the whole truth, seems to me unthinkable, and, if thinkable, untenable. It contains no reality: nothing really is: every occurrence or event is always passing away: the fluidity and inherent transience of the time-order infects everything and dissolves the universe into non-entity. Abide by this one solitary conception, and apply it unflinchingly, the whole universe shrivels up into the present moment. All the past was, and is not: but the past had no more substance than the fleeting present. The future is not; and when it comes it will have no more reality than what preceded. But why should the future ever be? If you say, the *law* of continuity necessitates its coming: then this *law* already rules the future, as it ruled the past and rules the present. Unless the *law* is absolutely nothing, the *law* is itself outside the universal fluidity of causation: it is the cause of the causation, and the infinite series is its effect. A perception of the impotence of the law of causation as an actual regularity of events (the scientific concept of *law*) to serve as a basis for itself has led some minds to supplement its inadequacy by a vague misty conception of *the whole* of things as the fundamental cause. But *the whole* is unknown to man: it is a conception which to him is incomprehensible: he can give to it no *meaning*. And the conception, so far as he can form it, of whole and parts cannot be transformed into that of cause and effect; for the whole is all its parts taken together as a unity, whereas cause and effect are different. If the whole is

cause and as such produces an effect, it produces something which was not before. If the effect or change is *part* of the whole, then the *whole* is not the *cause* of the part, for without the part the whole would not be the whole. Hence we get in metaphysics such monstrous assertions as this: I am as necessary to God as God is to me, for without me God would not be God. In truth, the human mind is incompetent to grasp the infinite and the eternal; though competent enough, it seems to me, to perceive its own impotence.

All these high and deep discussions belong to the region of abstractions. If we try to bring them down to the level of known realities, it is clear that our knowledge falls short of an ultimate unity of all things, and that, certainly, the universality of causation is not that ultimate unity. Science cannot proceed on the assumption of causation alone. It must have, at least, the concepts of matter and energy, space and time. Helmholtz, influenced by Kant, wrote: 'I have myself of late seen clearly that the principle of causality in fact is nothing but the presupposition of the subjection to law of all natural phenomena. Law recognised as objective power we call force. Cause is according to its original meaning the immutably Permanent or Being, namely Matter and the law of its activity, Force.'[1] Actually the scient works on the assumptions not only of matter, law, force; but of a plurality of masses of matter in a plurality of positions of space; and this will only suffice for a bare mechanical causation. The existing sciences require different kinds of matter and different kinds of force. The attempt to conceive of causation as only one kind breaks down under the accumulation of known facts. Schopenhauer recognised three different forms of causation: (1) cause in the narrow sense, by which I understand him to mean physical force; (2) stimulus, or organic re-action; (3) motive, the *end* of human agency. It is worthy of notice that human causal agency does not stand out on one side in opposition to natural causes, represented by matter and force, on the other side. Between the two he places the phenomena of vegetable and animal life. The hard and fast conception of matter as *inert* which underlies

[1] *Ueber die Erhaltung der Kraft.* 1881 note.

the concept of mechanical causation and is indispensable to it, is transformed in the concept of *protoplasm*, the matter of living organisms, to matter which can move itself for its own sake. The lowest protozoa, apparently structureless masses of jelly, which manifest the power of altering their shape to enclose and absorb nutriment, are *self-moving* matter, different from the inert matter of merely gravitating masses. The law of causation, to account for the actual world, must be supplemented by a law of evolution, a law of an ascending scale of beings, which rise by a series of gradations from inert and irrational matter up to man as a rational and free first cause. But man is not the only first cause. Matter and force are first causes, considered as the permanents which sustain the ceaseless succession of changes. Protoplasm is a first cause, considered as the origin of living phenomena. Not that permanent matter and energy, causation, and evolution, taken together suffice for a philosophy, or explanation of the universe; but a larger and more comprehensive survey of the facts of actual knowledge enables us to discern that human causality is not a contradiction to, nor an anomaly in, the otherwise uniform course of nature. As a matter of fact nature is uniform, but also uniformly diverse; it is subject to unchanging laws, but also it is the birthplace and home of free activities; matter and force, intelligence and free volition, all are to be found in the world we know; and there is nothing in our knowledge which necessitates our assigning the supremacy to matter and making mind a mere subordinate.

When we consider our actual knowledge of human agency as an original and free cause on the one hand, and the unsuccessful attempts of philosophy to construct a universal scheme of serial or secondary causation on the other, I think that we must arrive at this conclusion—we cannot set aside our real and certain knowledge at the summons of abstract theory based on abstract concepts, the concepts themselves being ultimately inexplicable and the theory being incapable of accounting for the universe to which it pretends to ascribe a paramount all-ruling law. All that we know as to human causation we know; and to call this in question is to threaten the foundations of all knowledge, all science, of all that enables

us to attempt the high enterprise of philosophy. At the same time we cannot set aside the concept of the law of causation —that is, of the secondary or serial causation which is expressed by the phrases, the reign of law, the order of nature. This conception is not wholly abstract and theoretical. So far as it is based upon known facts it is derived from observation and experiment, is the intelligent and convincing interpretation of the data of consciousness, is verified by our constant experience; to this extent secondary causation is real knowledge. And this natural order, this causal connection of events, is indispensable to the existence of the free causal power of man. For our causality in its highest development, as distinct from that of the amœba, the ant, the ape, is the action of our intelligent volition directed towards a designed end. These ends are the ends not of a self-contained being, isolated from the rest of the universe, but they are ends in the real world, and the means for their accomplishment are sought and found in this real world. Now it is manifest that in a world without order, the changes in which were not in accordance with law, where nothing happened regularly, man could make no forecast of the future, could prescribe for himself no ends: his intelligence, will and power to act would be paralysed in the presence of universal chance and chaos. But in such a world, we may say, man could not come into being; for human intelligence does not spring into existence full-grown like Minerva from the head of Jove: it is developed by slow growth in a continual experience of the constancy and reliability of natural objects and forces. Instead of the two concepts, free causation, and secondary causation according to law, being mutually antagonistic, they are evidences of a deep-seated harmony in the scheme of nature as a whole.

But what and whence this scheme of nature is, and why it is as it is, and not otherwise, is still a profound mystery. All that we know of human agency falls short of understanding how it is related to the universal whole; nor is this surprising seeing that the universal whole is itself unknown. While we may firmly reject a determinism, or fatalism, which asserts that we can neither turn to the right hand nor to the left of our own free will, but are in every choice and every action

over-mastered and propelled by an infinite whole of things which takes no account of our puny personality; we are at the same time unable to assert that our freedom and self-control are absolute. Somehow or other we find ourselves in the midst of the infinite; we are able to think that the infinite may be one and a whole; and so the conception that somehow the infinite may be working through and in us, not by the contradiction but by the means of our personal freedom, is not impossible. Here speculation is lost in our impotence to fathom the deepest mysteries. Meantime our real knowledge is practical: what we know of our personal causal agency is that it effects results which affect us. We seek and we find, or we neglect and miss, our own weal: we strive to escape and yet ourselves bring about our own wretchedness. Each one also makes or mars the welfare of many others, and altogether we are working out results which will affect generations yet unborn. It is not too much to say that the knowledge of our own causal power is on a level with the most certain and the most important knowledge which we possess. This is real knowledge: compared with which mathematics and metaphysics seem shadowy and unsubstantial.

Possessing this certain knowledge that man is a real first cause, that his causal agency produces results which benefit or injure himself and his kind, the most important inquiry for teleology is—what knowledge do we possess for the guidance of our causal power in right channels? Practical common-sense guides us in the selection of wise and good ends in the majority of cases. "Eat to live, do not live to eat"; *i.e.*, health is more important than pleasing the palate. "Honesty is the best policy"; *i.e.*, a man in the long run prospers more by treating his fellows fairly than by cheating them. The experience of successive generations has summed itself up in practical maxims of this kind which are of proved worth. But we want something more. The great desideratum is one supreme principle, or system of principles, governed by some one clear idea, which shall be the guide in all situations to the right course of action. In the majority of cases our *ends*, the objects we seek to attain, are sought not for their own sakes, but for the sake of something else. We have then to consider

what are the ultimate ends actually sought; and to inquire whether these *ought* to be the ultimate ends, whether they form a rationally-connected system, whether there is one cognisable supreme end, which dominates and includes all the rest.

CHAPTER IV.

PLEASURE AND HAPPINESS.

PLEASURE and pain are ultimate and inexplicable facts. As such they are indubitably real. 'Feelings of pleasure and pain, and the will,' said Kant, 'are not knowledge at all.' To estimate this dictum aright we must remember that, according to Kant, knowledge is of two kinds: (1) the knowledge of pure reason, which is *a priori*, and essentially abstract; (2) experimental knowledge, which is of phenomena, not of the reality. Pleasure and pain certainly cannot be brought under the concept of pure reason, which is intellectual only, not sentient. Nor can we put pleasure and pain among phenomenal objects of knowledge, for they are distinctly subjective; not only are they actually inseparable from the self: apart from it they are wholly unthinkable. In our thoughts we attribute these feelings to other selves and to animals; but apart from our own individual feeling of pleasure and pain the words have no meaning. There is no immediate sensation of pleasure or pain for any one except his own; that similar feelings exist in others is inferential belief. Speaking strictly, we must say that pleasure and pain are consciousness, not knowing. As states of consciousness, clearly distinguishable from each other, and perhaps also from a neutral zone of indifference, they are percepts, as blue and red, hard and soft are percepts. When we seek to get at the ultimate nature of pleasure and pain we are baffled. They belong to, are aspects of, the sentience of the subject. We ascribe to matter inertia and force as its properties: inertia is a word which expresses the fact that matter does not move or cease to move of itself; force is a word which expresses its resistance to, and action upon, other matter. Thus inertia and force are not separate entities, but belong to the nature of matter. Similarly,

pleasure and pain belong to the nature of man as sentient. They are the re-actions of his being towards or against particular complex conditions, whether internal or external—that is, in himself or in his environment. So far Kant seems to be right. Pleasure and pain are not knowing, but consciousness; they are not known, otherwise than as actual and distinguishable feelings. Nevertheless, they are not cut off from knowledge; but belong to that given reality, the immediate consciousness, which is the original datum of all experience.

When we imagine that we possess knowledge of pleasure and pain we are thinking of *pleasures* and *pains;* that is, of concrete experiences, different kinds of pleasure and of pain, which include much besides the bare feeling of pleasantness or the reverse. In these concrete circumstances there is always something else besides the pleasure or the pain; as when we find sunlight, warmth, sweetness pleasant. The conditions or causes of the feelings of pleasure and pain are included as parts in what we call pleasures and pains. These are to some extent knowable; and it is owing to this complex meaning of the terms that we regard ourselves as knowing the pleasant and the painful. It is because the conditions or causes of pleasure and pain are in many cases ascertainable that pleasure and pain operate as motives or ends, and so become guides to action. These feelings lie close to the very roots of volition; for if we were incapable of *feeling* we should neither desire nor fear. They also are closely connected with the origin of knowledge: for although to a purely intellectual being, not susceptible of pleasure and pain, it is abstractly conceivable that pure knowing might contain some interest, some impulse to seek its own growth; as a matter of fact, man begins as an animal, and his first, and all along his main, impulse to seek knowledge is derived from his sensitivity to pleasure and pain.

There is, then, no doubt that pleasure and pain are natural *ends*. There is no doubt that, though not themselves knowledge, they lead to knowledge; and that a very large part of human knowledge consists of knowing how to get pleasure and to avoid pain. If we are thinking only of the ends which

are actually sought by mankind, pleasure and pain are the mightiest words in teleology. Men seek health because health is, if not itself happiness, at least an almost indispensable condition to happiness. Men seek wealth, sometimes through an irrational illusion, for its own sake; but, when they act sanely, because they see in wealth the means to various kinds of pleasant feelings. The great majority spend nearly all their time and strength in working for mere sustenance, to escape the pains of hunger, cold and destitution. Pleasure and pain are the primary impulses which put in motion and guide the energies of humanity. No other ends are so universal as these: no other ends are more natural and reasonable. The theory which personifies nature as a designing agent, having as her ends the preservation of existing, and the evolution of new, species, may well see in pleasure and pain, which are necessarily our ends, the device by which she succeeds in arriving at her ends. It cannot be denied that we human beings are in this way to a great extent enslaved: we act, we toil, under compulsion; an immense proportion of our activity is determined for us by the conditions under which we live. We are far, very far, from being perfectly free agents. We live, not as we would, but as we must. From that point of view, while admitting that pleasure and pain are unquestionably teleological ends, it might be questioned whether they are properly human ends. But man himself is part of nature, and the nature which impels him towards pleasure and away from pain is his own nature. Moreover, man is a rational creature: pleasure and pain being perceived as existing conditions, his reason concurs with his natural impulse. Not to seek the pleasant, not to shun the painful, would be irrational. Consequently, we voluntarily accept these natural ends, and make them our own.

But now arises the important question—have we in the attainment of pleasure and happiness, in the avoidance of pain and misery, the sole or supreme end of our existence? Is this end our one sure guide to wise and right conduct? Under the names of utilitarianism and hedonism this theory has had many and able defenders. In discussing a question of such grave practical moment we must look at the whole

facts, and avoid dogmatism. First of all, let us distinguish this theory of hedonism from the position which has already been reached. We have already discerned that happiness —using that word for the sake of brevity, in the sense of the greatest amount and longest continuance of pleasant feelings, with the most successful evasion of unpleasant feelings—is a final end, an end-in-itself. Many things we seek as means: happiness we seek for its own sake. And it has been recognised that this seeking is natural, and reasonable, and so far right. But I venture to suggest that there is nothing moral in hedonism, although it is assuredly not an immoral theory. The true view seems to be that it is non-moral; that it belongs to a stage of development where moral distinctions have not yet come into operation. Hedonism is concerned with pleasure and pain, with happiness and misery. While considering these, and these only, there is no room for the question—what *ought* I to do? None, that is, except so far as the means for obtaining the desired end is concerned. From the point of view of hedonism, our making pleasure or happiness our end is not a question at all. We choose this end as a matter of course. It is involved in the nature of pleasure that we choose it; in the nature of pain that we avoid it. The notions of duty, or moral obligation, of right and wrong, do not come before us. If there were nothing else in human life and human thought than these two opposites, pleasure and pain; the notions of duty, of right and wrong, would not be wanted, would not arise at all. There is no merit in accepting a pleasure: there certainly is no merit in declining one—if such a declining could be contemplated as possible—unless there enter into the case other considerations than those of pleasure and pain. Of course, human foresight plays its part here: if a present brief pleasure is known to involve a future much more than counterbalancing pain, prudence should guide the choice. To choose the momentary pleasure is folly. But this introduces no new principle. It is still pure hedonism. We need not therefore complicate hedonism by confusing it with morality. It is difficult enough taken by itself.

For the question of hedonism is not whether we shall choose pleasures and avoid pains; whether we shall so act as to obtain the first, and escape the second. Of course we do and shall do that—while no other considerations come into view. But the question is—can I, with practical advantage, make happiness my guiding principle? In particular cases an hedonistic end is a guide to action. If I plunge my hand into boiling water I know I shall be scalded; therefore I try the temperature by approaching the water with the tip of my finger. My end is to avoid pain. In countless instances of daily life this practical hedonism is an infallible guide. But when I turn away from small immediate affairs, when I take a longer and larger view of life, and consider what will be for my greatest happiness on the whole, this same guide is found uncertain in its advice, and frequently deceptive when most confident. The trouble is that hedonism necessitates a calculation, and our data are insufficient. One man cannot rely upon the example of another; for there are so many varieties of human nature. One man's meat is another man's poison. Nor can I rely upon my own past experience; for as time rolls on I change and circumstances change. The young man despises that which was the boy's delight; the old man pities the ideals of his own youth. General opinion is no safe guide; for in fact the world after its thousands of years of experience has not arrived at any real knowledge of a safe and sure road to happiness. Not only is the way unknown, but the end itself is unknown, and many, even of those who hold the hedonistic theory, are doubtful whether happiness exists. For this is the remarkable fact: we know pleasure and pain as sharp contrasts in experience; we know various kinds of concrete circumstances which are generally pleasurable, and others which are generally painful; but these are all particular cases. By happiness we mean a sum and continuity of pleasant feelings; and when we propose to make it our end, the proposition places it in the future as a yet unrealised good. It is therefore an imagination, an ideal. What then is this ideal? No one can give a description of it. The young, proverbially, indulge in vain hopes of

an indefinite kind; the old are, as proverbially, disillusioned. One may say this without being a pessimist. For myself, I hold that there is much happiness in human life, and that there are other things worth living for besides happiness. But that is transgressing our present limitation. We want now the actual facts which bear upon the hedonistic theory. If happiness is to be the guide to action, I need to know two things: what happiness is, and what are the means whereby to obtain it. There is no science of happiness, no science of the way to get happiness. Hedonism gives us the practical rule—*Always choose the course which you think will produce the most happiness.* But the rule is of no use to those who do not know what course will produce the most happiness, nor what happiness is. Another rule is—*Give up a present small pleasure when by so doing you will secure a large pleasure in the future.* An excellent rule: but how can we be sure that the expected pleasure will be secured? It is a matter of calculation, the issue after all often disappointing human expectations. And these previsions and estimates are only possible in respect to some definite facts of a limited extent. A young man may scorn delights and live laborious days in order to learn a profession, to succeed in business, to win a wife; and may, or may not, find himself in the end fully repaid. But if a young man puts the question—what will be my happiness, as a whole, from this time, and perhaps for fifty or sixty years onward? he cannot answer the question, and no one can answer it for him—on grounds of hedonism. The hedonist philosopher has plenty of good advice ready for him; and perhaps the wisest is not to seek happiness directly at all; but to seek other good and useful ends, in the expectation that more happiness will be got in this way than by directly pursuing pleasure in any of its forms. This however is a confession that the hedonistic theory is not practical.

If we consider hedonism as seeking not only nor chiefly the individual's good, but as including the altruistic end—the greatest happiness of the greatest number—this extension of the theory does not remove its difficulties. In the first

place, it is obvious that my happiness and that of another, or many others, may come into antagonism. These cases, like the different qualities of pleasure, do not come under the quantitative measurement of hedonism—if there is any such measurement. But leaving these special cases out of account, we find in altruistic hedonism the same insuperable difficulty that egoistic hedonism contains. There is, it seems to me, nothing whatever to be said against seeking the greatest happiness of others—it is an admirable principle, and although not so immediately and irresistibly impulsive as the instinctive care for the self, it is a genuinely natural principle. Man is a gregarious animal; and he finds his own welfare bound up with that of his village, his tribe, his class, his nation. But if this maxim is proposed to me as the supreme end which is to guide all my actions, an end which is to determine all minor ends and become the rule of my life—then I must inquire of my preceptors: *what* is the happiness of the greatest number? The question which I find cannot be answered for the individual is certainly no less perplexing in the case of a nation, or the whole human race. Would it be the greatest happiness of the human race to be civilized after the British fashion: to wear trousers and tall hats, to live in great towns like London, to possess a Stock-Exchange and a House of Lords? Are the British people really happier than the Burmese? On the other hand, if I discern deficiencies in the happiness of the average Briton, what are the remedies? Would it really make them happier if they wore soft felt sombreros and had no House of Lords? If I am to make their greater happiness my aim, I must know what that greater happiness would be, if it could be realised.

Happiness, then, is something the nature and conditions of which are unknown. Pleasure and pain are feelings belonging to actual consciousness, and knowledge of the circumstances in which they arise is a guide to action by which the painful feelings are avoided or mitigated, the pleasant feelings acquired and retained. But abstract pleasure and pain, even in the simplest and best known examples, are unknown. What we know is the complex reality—the pleasantness of

rest when one is weary, the pain of disappointment when the thirsty expected water and finds that the well is dry. Within the reality these feelings are unmistakable. Try to abstract them from the reality, we know not what they are. Nevertheless, they are to a large extent reliable guides in cases similar to cases previously experienced. When, however, we pass beyond the indications of past experience, and frame the concept "happiness"—as a state of continuous enjoyment of some pleasantnesses, these being only vaguely conceived—the concept is of something not yet experienced. It is to be constant: all our past pleasures have been transient; it is to satisfy us perfectly: our past pleasures at their best never completely satisfied our whole natural craving, unless for a brief time; it is to be a single state of happy feeling, or a sum and succession of complex feelings, in which enjoyment flavours the whole. What is it we desire? Clearly, we do not know. But it is something different from the past experience. We cannot even be sure that it is possible. We may be yearning for an unreality: not for something possible in the future, but for that which never can be. In this state of ignorance as to the nature, the conditions, even as to the possibility of this ideal happiness—how can we make it our *end?* By *end*, according to definition, we mean something which we set before us as possibly realisable; something which is to be realised by our active efforts; something, therefore, which is not barely conceived as an ideal, but in regard to which there are ways and means to be tried. We may begin in uncertainty as to the best means, the shortest and surest way: but some means, some ways, are within our reach. An *end* is not a vague desire for an unknown good. No one disputes the fact that all men like to be happy, would prefer to be always happy and perfectly happy. But the question is, can you and I make this vague concept *happiness* our end, in the sense that by keeping it ever in view we shall always know what to do, in all the varying circumstances of life? Have we such a knowledge of happiness that we can set to work to get it, with a rational confidence that we, or some of us, will have a good measure of success? Put the plain question as a matter of fact, and the

answer is prompt: we do not know what would make us happy; we do not know how to seek happiness; and in fact we do not seek it. We may vaguely yearn for it: we may energetically strive for something else, under a more or less distinct conviction that thereby happiness will be attained; but happiness is not the supreme end which actually guides the actions of our life.

Is, then, happiness an illusory concept? Are all men, or most men, living under two delusions—first, that there is a future felicity, possibly attainable; and secondly, that their actual efforts to realise various subordinate ends are motived by the desire for this future happiness? An opinion that such is man's fate is occasionally to be met with in the poets, and elsewhere. But I apprehend that the opinion is not based upon real experience. As matter of fact, if one man may venture a general assertion, most of us rarely think about happiness; we have particular interests, particular ends, which we neither derive from nor connect with this vague indefinite concept, happiness. Of course, we prefer happiness to misery, and so far as our thoughts anticipate any far and long future we wish that future to be happy. But the ends we actually seek are not so very remote, and we make them our ends independently of this vague remote concept, happiness. The labouring man works for his wage: and his wage is the wherewithal to get food for the wife and children. If he considers it as representing his own happiness, very likely that takes the definite form of "beer and 'baccy". My own conviction is that the world is not a bad place after all; that there is much more happiness than misery in it. But also, so far as my observation goes, the actual men, women and children in the world are not under the rule of hedonism. If you ask—what, then, is the impulse to their activity? I reply, pleasure and pain, no doubt, are the original and principal impulses: but this hedonistic motive is directed largely by habits; is influenced greatly by public opinion; is turned in almost every instance upon concrete cases, in which pleasure and pain are not the sole considerations, but only part of the whole complex of circumstances. In short, the abstract concept *happiness* has some roots in the real world; but it

plays a very minor part in actually guiding human affairs. Men and women are not really deluded by the concept. Speaking according to the facts, the notion of *happiness* belongs to philosophy. It is part of the general view of the universe, as the philosophers and poets imagine it ought to be. Men and women who are not poets nor philosophers do not think about happiness in this universal way. They think about pleasures and pains: perhaps think about them too much; but, even so, most of us have other thoughts and interests also. The feeling of pleasure and pain is not the only characteristic of human nature; nor is it that sole and supreme motive which the utilitarians supposed it to be.

CHAPTER V.

KNOWLEDGE AND ART AS ENDS.

THE hedonists say there can be no ultimate end except pleasure: whenever we desire anything it is because we expect that it will give us pleasure. But it is better to keep close to the actual facts of experience. In reality, man is a complex being: he has many appetites and cravings, physical and mental. Each of these, in its place and time, craves satisfaction. The desire for knowledge is as natural as the desire for food—though the necessity for food seems the first, and the most imperative need. Knowledge, indeed, is in its early appearance valued rather as means than as end. If food is the first want, the want of food may be the first thing which sets the intellect to work. There is, however, a natural appetite for knowledge; which is manifested when children, and others, "try to find out" something, from "mere curiosity". Yes, the hedonist may exclaim, man finds *pleasure* in knowing. That, however, is not always the case. Long ago there was a proverb—"he that increaseth knowledge, increaseth sorrow". It was the utterance of a pessimist. Nevertheless, it is plain that when we seek to extend our knowledge we cannot foretell what the result will be. It is by no means a certain and self-evident axiom that every step onward in the progress of knowledge will bring pleasure with it. Why should we hesitate to recognise the conspicuous examples of men who openly avow that they pursue knowledge for its own sake, and not for pleasure, nor for fame, nor for reward? Knowledge may be, and is an end in itself, an end chosen and followed because men believe that knowledge is truth, and that truth is precious beyond comparison. Why they hold this belief is at present not apparent to us. For we ourselves

are seekers of knowledge of a peculiar kind—knowledge of knowledge itself. This quest of ours implies that we do not yet know what knowledge is; and therefore we can make no dogmatic assertions in regard to its truth and preciousness. Or, if we begin now to have some glimmerings of apprehension, it is that the common notion of knowledge is in some respects faulty. Meantime, we observe that knowledge, science, has its ardent devotees, whose passion, and even religion, it is to seek knowledge, and yet more knowledge; and in this pursuit they sacrifice pleasure, ease, wealth, and other desirables. Why should we cast any slur upon the genuineness of their devotion to their chosen ideal? It is surely as respectable an ideal as pleasure; and as actual.

That knowledge is an ultimate end, an end chosen and sought for its own sake, I hold to be an evident matter of fact. It seems to me, also, that this matter of fact is matter of reason and of right. As intelligent beings it is natural and fitting that we should seek knowledge; and the nature of the case requires that in seeking knowledge we should not be turned aside by any considerations which might bias our judgment. This means that we must make knowledge an end in itself. When we want to know, we want the truth of things; the facts, the causal sequences, the laws, as they are—not as we would like them to be; not so conceived that we may be happy in our conceptions, but conceived in conformity to the reality, whether that reality be agreeable to our personal predilections or the reverse. This is the scientific spirit, and in seeking knowledge it is necessarily the ruling spirit. To seek knowledge otherwise is to risk missing our aim. Even when knowledge is sought only as a means, in the act of seeking knowledge we are obliged to abstract from the final end, and to concentrate attention on the immediate end, the knowledge sought. We must first know the facts as they are, and their laws, in order that we may by means of this knowledge bring to pass the ideal end for the sake of which we seek knowledge.

Knowledge, then, is an ultimate end; but is it *the* ultimate end, the supreme end, the end which, when attained, will give the complete satisfaction for which our nature craves? Or, if

not that, is knowledge the first and supreme necessity, the prime condition of the satisfaction we crave, although not the satisfaction itself? The Hegelian doctrine seems to teach that knowing is the fundamental reality of being, the absolute idea itself which creates all that it knows. We paid some attention to that in our survey of the philosophies; but the dogma did not appear to be comprehensible. At any rate our finite human knowledge does not seem to possess creative power, except in a subordinate sense, and to some small extent. Man can create watches and steam-engines; he can create Hamlet and Caliban; but however much he can do in the world of fact and the world of phantasy, hitherto he has shown no great ability either to create his own happiness, or to make his own ideal of knowledge a reality. The other assumption, that knowledge possesses of right and in fact supreme authority; that first and before all things we need to know; that the intellect is the supreme judge, from whose court there is no appeal, is both more moderate and more probable than the notion that knowledge *is* the reality. Considering this claim from the point of view which seems to be its own, namely, that knowledge is abstract and objective; or, in other words, that science is the type of knowledge, and taking science at its own estimate, there are reasons for thinking that its competency to pronounce a final judgment without appeal is not unquestionable.

The first reason is that science, according to its own description of itself, confesses its incompetence. Science is the observation of facts, the discovery of laws of sequence; its fundamental principle is the uniformity of nature, the universality of causation. Thence it follows that science cannot judge *the whole;* it knows nothing of *the beginning* or *the end;* nothing of the reason *why* things are what they are, or why they are at all; nothing of a real omnipresent power which supports and rules the whole. Consequently, such knowledge is inadequate to the task it has undertaken. It would judge the reality: it finds itself compelled to acknowledge that it does not know the reality, but only phenomena; that it does not know the absolute, but only the relative; that it does not know the eternal, but only a time without known

beginning, without known end. Therefore, by its own inherent and necessary limitations, it is shut up within the two imperfect infinities—the infinite regress, and the infinite progress—the backward glance which never can get behind an effect also preceded by a cause, which like itself is preceded by yet another; and the forward glance which, strain itself never so much, can find no conclusion, no resting-place, no solution of the endless enigma. This is *not* satisfying the demands of the human intellect. Science itself feels and confesses this by the mouth of those who acknowledge the facts, and aver that they would even have them so. Not the capture, but the excitement of the pursuit is their reward, they say. But this is "sour grapes". Man cannot be satisfied with excitement alone. The excitement of the chase is enough for an hour or two; but the huntsman's strength flags, his limbs grow weary, his nervous system is depressed. His nature demands rest, shelter, food, sleep: without these the end of the chase will be, not satisfaction, but death. The fact that science is compelled to make this pretence or to admit its unsatisfactoriness is a confession of its unfitness for the position of sole and supreme judge.

The second reason is that human nature is not mere intellect. Intellect has its place and its rights; but it has failed to perform the task it undertook. Under these conditions it has no right to refuse to acknowledge other constituents of human nature which also exist, and make their natural claim for consideration. We have seen what abstract intellect can do in psychology and in philosophy: and—in spite of immense efforts by intellects of the highest order—we have seen that the result is not knowledge. If the abstract intellect cannot attain to knowledge, it may well abate something of its high pretensions to be sole and supreme judge; and allow other sides and capacities of human nature at least a place as assessors in the court—if, peradventure, by their assistance some verdict may be possible. Or, to put the case in another way: the pure intellect, the abstract reason, which sets itself up as the supreme judge of reality, is itself an unreality; it does not exist; it is nowhere to be found. The actually existing human intelligence is not a separate entity,

but is a name for a human being in one special mode of his activity. The real human being must admit his æsthetic temperament, his feeling of right and wrong, his religious convictions to a share in the council when he tries to discover what can really satisfy the wants of his nature.

"Art for art's sake" is a sentiment to which not all of us can do justice. Pleasure and knowledge are universal ends: no one can help taking them as his own ends, to some extent; although no one is forced to make either his sole end. With art it is different. Only a select few are so endowed by nature that art specially appeals to them, and claims them as its devotees. Still the philistine multitude can see and feel that there is "something" in art: and we may freely admit that art as well as knowledge is a genuine end in itself. But to be an end in itself is not necessarily to be the sole or supreme end. If this high claim is made for art we hesitate to assent, on account of its lack of universality. So far we have prosecuted our inquiry on the tacit assumption that the human race is one genus, that the numerous varieties, and the various degrees of development, are all compatible with one fundamentally identical human nature. In essence, we think, men are alike. If this is not so, the basis of common knowledge and of the sciences is removed. Every scient, every philosopher reasons on the assumption of the unity of man. If there are two or more kinds of men, with essentially unlike natures, this assumption must be abandoned; and with it we lose our fundamental certitudes. We shall not easily give up the foundations of our knowledge; and certainly not upon the demand of a claim advanced by a small class, who are unable to substantiate the claim. For the special class themselves cannot make art their sole end: they cannot wholly defy the need of pleasure and of knowledge. It is manifest that art can at the utmost occupy only the chief, the ruling place in their lives: it cannot be the sole end. If they claim that *for them*, at least, art is the supreme end, it is incumbent on them to prove their case. If it is not an arbitrary assertion of individual wills, but based on reason and natural law, they have to make this manifest for their own

sakes. No man can separate himself from his fellows and set up a separate standard of right living just by his mere personal will and pleasure; nor can any class do this. We can freely recognise, without making any injurious concession, that art is an ultimate end, to which some specially endowed individuals may and do devote themselves almost exclusively; but we cannot admit art as the supreme end for any one.

Art is an outcome of the æsthetic emotions: the delight and the awe which man feels in the presence of beautiful, majestic and awe-inspiring objects. These emotions are not confined to a special class, though felt in various degrees according to the stage of development which has been reached. Possibly, it is rather the expression of the feeling than the feeling itself which is developed by civilisation and culture. However that be, the love of the beautiful seems widely spread, and perhaps extends even to the animals. What is the character and meaning of the *æsthetic* quality, the beautiful and the awful, in the emotion itself and in its object? The answers to this question are so many and so various that to pretend to know the answer would be impudent. Some attribute the origin of this peculiar kind of feeling to the animal sexual appetite. Kant saw its distinctive character in its disinterestedness—it is unselfish pleasure which enjoys the object without desire to appropriate it for self alone. Wundt lays stress on its contemplative character. Tolstoi finds its root in man's social nature—art is the effort of the artist to express his feeling to his fellows. Since Plato the æsthetic feeling has been regarded as closely allied to moral and religious feeling. The true, the beautiful and the good form the trinity of supersensuous ideals. But what *is* it? "Art is a revelation"—what does it reveal? Beauty is an ideal—where and by whom has it been realised? This ultimate end, like the two former, seems to be inexplicable and unattainable. Happiness, knowledge, beauty, no one knows what they are; no one has obtained perfect satisfaction of his desires for them. The ends are ideals: their realisation has not yet arrived.

Nevertheless it is a fact of consciousness that man has these æsthetic emotions, and that nature, the reality, both awakens them in him and offers itself as the object corre-

sponding thereto. Beauty and awfulness belong to the reality. Nature is not merely a hunting-ground for food, a breeding-farm for propagation of species; nor is it merely a scientific museum and laboratory, containing objects for analysis and classification. Nature is a living creature, wooing our love by her loveliness; soothing us in our weariness and bitterness of soul; chiding our impatience and fretfulness by her calm peacefulness; humbling our pride by her awful majesty and inscrutable mystery. In the exquisite grace of a harebell trembling on its thread-like stalk, in the solemn procession of the stars through the silent night, a spirit speaks to us in a soundless voice, whispering to the human spirit in unutterable tones which the poets vainly strive to express in words. Knowledge is not everything: feeling also is reality: in pleasure and pain it cannot be ignored; in our feelings of beauty and of awe we are raised above the grosser animal nature, and feel ourselves drawn upward towards the spiritual and the divine.

CHAPTER VI.

DUTY AND MORALITY.

DUTY and morality are two names for one and the same general concept. Both refer to human character and conduct, as a whole and a unity, so far as it is determined by the individual's own volition and action under the feeling of personal responsibility. Both are directed towards the attainment of one ideal end, moral perfection. The shade of difference between them consists in this: duty expresses the feeling of obligation; morality is the character and conduct which the obligation requires. Duty or obligation is the "ought," the "thou shalt or shalt not" of the moral law. Because it refers to an end yet to be realised, not yet actually existent, it points to the future, to what is to be and ought to be. Hence it is a judgment regarding the future as that which is not absolutely determined, but will be determined by human volition and effort. Right is the name for that which the moral law commands; wrong is the name for that which it forbids. The terms duty and morality must not be taken as standing for things or entities, still less for abstractions: they express our conception of the self, the human being in his willing and striving *to do* his duty, *to be* morally right and good. The reality is the self feeling thus, willing thus, judging and acting in this way. Nor because he strives after an ideal end must we think that morality is a mere *ideal*. It is an actual, a continually repeated striving, intermittent in its manifestations, but animated by a constant principle. Both the principle and its effects are at one and the same time actual and ideal, in the present and in the future. In our description of reality we must not be afraid of apparent verbal contradictions. Reality is too vast and too complex to be neatly and finally summed up in our dogmatic asser-

tions. Consider nature's ends, the preservation of life and perpetuation of the species. These are constantly attained: life is preserved, the species is continued. They also constantly fail: each individual life passes away; the species lasts longer, but many species have been extinguished. So human duty and morality are not mere ideals; they are to some extent realised. Yet, regarded as the striving towards perfection, they are efforts to realise an ideal end, at best only partially successful.

If now our business were to study the evolution of morality, the task might not prove so very difficult, though we should encounter diversity of opinions, and have to discuss debatable theories. On the other hand, if we were metaphysicians or philosophers, trying to understand the universe as a whole, and to sum it up in one all-embracing theory in which human duty and morality must be exhibited as parts having known or thinkable relations to all other parts and to the whole, I suspect we should, like our predecessors, find the enterprise too vast for our small powers, and lose ourselves in interminable speculations. But neither of these efforts is our affair. We stand upon the ground of facts of consciousness, upon real and certain knowledge, produced in and verified by all experience. The actual consciousness of the man consists at once of feelings, concepts or ideas, judgments, volitions and actions. His purpose to strive after moral rectitude is a constant, or should be a constant, purpose, and its effect is a continuous succession of these mental contents. In each particular case as it arises he does his duty, or he fails to do it. Thereafter follows a judgment of approval or condemnation. In a new case he finds the right course easier or harder, according as he did or did not adopt it before. In this continuous life the ideal is sometimes partially fulfilled, sometimes missed. But to regard such a life as this as merely ideal would be a misrepresentation. What is vitally real is the man's persistently renewed, if not uninterruptedly maintained, striving towards a perfect realisation of his own convictions of duty.

In our observation of human teleology we have observed several ends—pleasure, knowledge, beauty—all of which as

ideals presuppose and rest upon real facts of experience—facts as to which no doubt is possible. Among such certainly known facts none are clearer and surer than those which fall under the moral distinctions of right and wrong. Whether we look within and reflect upon our own individual experience, or look without and study that of other individuals and of human societies, as expressed in conduct, language, laws, literature, history, religions, everywhere we observe these facts and feelings of the moral distinctions as part of the warp and woof of all human experience. Moral right and wrong are ultimate facts and feelings. An ultimate is none the less an ultimate because it is evolved, that is, manifested after other phenomena have preceded and prepared for it. An ultimate is only known as such when scientific and metaphysical analysis have discovered its indecomposable and underivable character; but, being an ultimate, it is also an original, a primordial fact. Thus the moral *quality* is an *ultimate*, which no putting together and turning about of space, time and matter, of pleasure and pain, or of any other non-moral elements, can produce. Right and wrong are as distinctly and certainly known ultimates for the moral sense as pain and pleasure for sentience, true and false for the logical understanding. They are aspects of the reality, inherent in the reality itself, and like all ultimates, though inexplicable, they are indubitably real.

Does not my reader agree with me? Does not he feel and know right and wrong, both as fact and as feeling? Here I can appeal to and confidently expect universal assent. Even the vicious and the criminal classes manifest signs of a moral sense. And though we cannot be sure that every individual of the human race is normally developed, this ignorance does not diminish our certainty that the normally developed man is a morally responsible being. Finally, I take my stand upon the fact that the certainty of right and wrong is the clearest, the strongest, and the highest certainty we possess. Logical and mathematical certitude are inferior; they are of an abstract intellectual character; they are pale creations of abstract thought. Moral certitude is alive with more than flesh and blood reality; it is a light that shines in the soul,

a fire which scorches and brands the conscience. Yes. We who believe in morality and duty are supported by universal assent—the only universal assent worth having—the assent of all who are not morally degenerate or depraved. If there are, in fact, human beings who can and do truthfully affirm that for them the distinctions we call right and wrong are unmeaning, that they have never felt either the approval or condemnation of conscience, that they have never felt any desire to be good or to do good except so far as this means acquiring pleasure and escaping pain, we must leave them on one side. Though they wear the human form and manifest in other respects human intelligence, we cannot account them normal human beings.

Taking our stand upon these certitudes of the moral experience, it is now our business to consider what we know of the moral ideal as an end in itself. Here we observe, as in the case of the ends previously considered, that we have no complete and exact concept of that moral perfection towards which we must strive. Infallibility and omniscience are as plainly beyond our reach in morality as in the rest of our experience. We fail in our attempts to conceive and to define the perfect moral state, just as we fail to conceive and define perfect beatitude, perfect knowledge, perfect beauty. The ideal is beyond us: "it doth not yet appear what we shall be". We conceive it vaguely as always desiring and willing and choosing the morally right in all possible circumstances, while at the same time rejecting and loathing the morally wrong. But we cannot pourtray or define this state as an actual existence, because we do not know "all possible circumstances". We only know right and wrong in a limited experience containing a variety of cases. Our knowledge of right and wrong has been growing in the past, and we expect it to continue to grow. To soar up by mental imagination to a height where we shall have no more to learn, and where moral progress will be for us impossible, because we shall have attained perfection—this is beyond our power. We cannot even feel sure that for finite beings any such perfection is possible. Does this cast doubt upon the reality of our present endeavour? As well might one ridicule the effort of the

racer who has just left the starting post, because he is not at the same moment at the goal. We cannot be in two states at once. Let us candidly confess our inability to describe a state of which we have had no experience.

The moral ideal, then, as end in itself is a real end. The individual self who has in review an experience of a past duration perceives this end as sometimes at least realised to some extent. In the present moment, the time of volition, choice, action, he perceives the end as now once again to be attained. And looking forward to a continuous future, the ideal remains a constant end, to be ever more and more realised, made his own actual being. But this is not all. Duty as the pursuit of moral perfection constitutes not merely one ultimate end among other ends; it is the supreme end, to which all other ends are inferior and subservient. The supremacy of duty is not matter of opinion, of arbitrary preference. The moral quality in man is supreme in its own inherent and real nature, reigning not by the arbitrary will of man, but because his nature is so constituted by that which, for want of a better expression, we may call the essential *nature of things*, the character or quality of the ultimate reality itself. What this reality *is*, in its unity and entirety, in its deepest innermost nature, we know not; but it is out of and by this reality that human nature comes into being; and the human nature by its own inmost essence is governed by the moral law which enthrones duty, or what we call conscience, as the rightful sovereign, commanding and forbidding, without appeal, in every case of character and conduct in which right and wrong are involved. Duty, and duty alone is obligatory.

Here let us distinguish between three concepts which are sometimes confounded—necessity, compulsion, obligation. By necessity we mean that which must be, cannot but be, and therefore *is*. Whether this concept has any truth in the reality of things is a metaphysical question, which let metaphysics settle if it can. It seems to us to have some validity in logic and knowledge. For us it is an intellectual necessity to be logical: we can neither affirm nor believe contradictions, though it is possible to believe that apparent

contradictions which we cannot reconcile are not contradictions in the reality. Our knowledge so far as it goes is necessary. We cannot but accept our own perceptions. That which I clearly see as white to me must be and is white; black it is not, and cannot be. To me two and two are four: it is a necessary truth: no shifting and juggling can make them five. Similarly, in our knowledge of right and wrong, right which we know to be right cannot be for us wrong. Despite all equivocations and would-be self-delusions, our clear and certain knowledge is necessary. But what we mean by necessity is still a problem. Is it any more than—whatever is *is?* Compulsion is another affair. Here the root notion is *force:* and it takes its complexion from our concept of physical force—a concept which is inexplicable. We really do not know what force is. In our personal experience pain and pleasure are compulsory; that is, they exert an attractive and repulsive force upon us, drawing us towards some actions, and driving us away from other actions. Whenever we are in the grasp of physical force, and are hurried along against our will, there is no question of morality involved. A man falling from a precipice, whether by accident or having deliberately flung himself down, is, as he passes through the air, in the clutch of gravitation: his movement is no longer his own. Hedonism, however, exerts no irresistible compulsion. All of us, whether good or bad, moral or immoral, are continually setting its compulsion at naught; it may be, simply to obtain a larger pleasure in the future; but the fact is we are not in the power of mere pleasure and pain, to be moulded by them without our consent. As matter of fact and experience we know that these motives can be kept in subordination to other ends, whether of science or art or morality. Every thing can be surrendered, every pain can be endured—even to the loss of life itself. History abundantly confirms this.

Obligation is quite distinct from necessity and compulsion. Only morality is obligatory, because this feeling or quality alone possesses the peculiar character of asserting authority to command our volition and choice. Figuratively, we speak of this as the voice of conscience, or of the moral law.

Actually, it is our own voice, our own moral judgment, it is the self which speaks and commands. Therefore there is no appeal against this judgment. The moral command is not something heard outside in the air, up above in the blue sky or from the stars: it is within us, it is ourself. Because I thus judge and know this course of action to be right, I therefore command myself to perform it. I cannot at one and the same time know it to be right and withhold the commandment; for this feeling, consciousness, or conscience, of the right is the commandment. I may be weak or wicked, I may shrink from obedience, I may actually disobey; but this weakness and wickedness is a state of mental and moral disorder and disease. The weak or wicked will has no inherent right to oppose the real judgment of the man's own consciousness. And if the evil course is chosen the authority of duty is not abrogated. It asserts itself in self-blame, penitence or remorse.

This sovereignty of duty asserts itself, in the first place, in particular cases, when a choice has to be made, a course of action to be determined. The particular case, however, when past is not done with. Retrospective judgment revives the past, and discovers that it is not wholly a bygone. Something still lives which was concerned in that past action, and that something is the self. The unity and permanence of the self is not brought to light by duty alone; for self-interest in hedonism, in knowledge, and in art also leads to the same discovery. But in no other mode is the self so inwardly and vividly disclosed as in its self-judgment. Conscience is self-consciousness. This immediate feeling of the self in its own judgments of itself as right or wrong, moral or immoral, leads to the important result that the moral judgment does not now confine itself to particular cases of conscience as they arise, but regards self as a permanent and developing unity. To have done right or wrong, once or several times, is a grave fact; but to discern oneself as a being who grows towards the right, or deteriorates towards the wrong, is a far more serious discovery. To him who has reached this stage of development, henceforth the ideal is no longer merely to choose the right on separate

occasions, but to be the right character, to have a nature with all its tendencies and dispositions trained and prepared to respond with alacrity, courage and strength to every command of duty as it arises. The supremacy of duty now extends over every department of life, every activity and relation of the human conscious being. For everything, whether hedonism, knowledge, or art, whether of individual or social or political interest, has its direct or indirect influence on the formation of the character. This supremacy of duty thus gives unity to the otherwise disconnected tendencies of human nature. In this way duty as the supreme end is practically the guide of life; not merely the guide to moral activity, but the guide to action in general.

The above, I think, is a true and faithful description of human nature as it is, so far as we know it. This is real, not abstract knowledge. It makes no pretence to explain ultimate mysteries. But, so far as it goes, this is real practical knowledge, which no reasonable, no genuinely sane man will call in question. The certitude of the self is its centre, its basis, its main principle, its chief concern. That we are is fact of consciousness. What we are we do not know, except dimly. But that we have our duty to do, that we are doing it or not doing it, and thereby are fashioning our own characters, are becoming wiser, stronger, better men and women, or are deteriorating and sinking into moral weakness, flabbiness, degeneracy, vice—this is the one certain knowledge which we know indubitably, and this is real knowledge of inestimable importance.

CHAPTER VII.

RELIGION.

ON this, the last and loftiest range of human thought, not much is to be said here. Partly because the difficulties and the controversies connected with religion were the occasion which led to the undertaking of this investigation into the nature and grounds of human knowledge; and if this present enterprise is brought to a conclusion, the result, it is hoped, will be useful in a separate essay, to set forth the nature and grounds of religion. Partly, also, because in our study of knowledge it is best to confine our attention to that certain knowledge which commands universal assent. It is commonly agreed that religion is not exclusively based on knowledge, that it is largely, or chiefly, a matter of faith Within the bounds of religion itself there are many and grave differences of belief; nor can it be truly said that all men are of some religion: for, setting aside the non-moral, the merely sensual and selfish part of the community, who are not worthy of consideration, there is an influential class of agnostics, who hold that religion is unattainable. For our purpose, then, as students of knowledge, it would be inappropriate to enter into a study of religion in this place.

Nevertheless, having begun an enumeration of ultimate ends, to omit the mention of religion as one of these would be a falsification of the facts. Whether religion is true or not, it is an actual fact that men have believed and do believe in religion; and that to these, no small proportion of the human race in all ages, their religion is an end in itself, to many the supreme end, for which they profess to live, and not rarely have shown themselves ready to die. The place and connection of this end among the rest is a matter which ought to receive attention.

We have seen that our common knowledge and the sciences are based upon three fundamental certitudes: the self, other selves, and the physical system called nature. This triple foundation suffices to support a large amount of knowledge. Physical nature is the subject-matter of the sciences. The self and other selves are the subject-matter of logic, ethics, history, politics, etc. It is clear, however, that all this mass and variety of knowledge hangs loosely together. Some hidden bond of connection we strongly suspect, or even firmly believe. But what that bond of connection is has not been discovered. Many philosophers have made the attempt: but without success. Religion is in some respects a kind of philosophy. It brings together into a unity the whole world of phenomena, has its own explanation of the whole, and in its way satisfies the demand of the human mind. But while philosophy is an attempt of the intellect to solve the universal problem, religion brings to it another attitude of the human mind, called faith.

Historically, this view of religion does not altogether hold good. For a right understanding of the subject-matter we must refer to Comparative Religion, a young and immature science, which has already accumulated great stores of information. Here it suffices to observe that religions fall into two great divisions: the non-moral and the ethical. I suppose that at no period in the history of the race was man ever wholly destitute of either morality or religion, and probably there was always some connection between these two principles. But in the older primitive religions morality had not the place which it holds in the undoubtedly ethical religions. It would seem that there was an age when the gods were regarded as mysterious mighty beings, to be dreaded and propitiated, when as yet it was not conceived that they cared about ordinary human morality. Again, there were religions in which morality had a place, but not the place it possesses in the highest and purest forms of religion. But even in the list of heathen religions there are some, Confucianism and Buddhism for instance, in which the ethical element is the most important. The three religions in which morality is most completely incorporated—

Judaism, Islamism and Christianity—are the great examples of that ethical religion with which alone we are practically concerned. In ethical religion there is not a blending of two different principles, morality and religion, but one supreme and all-embracing principle, in accordance with which one supreme end is recognised—an end which is a unity, including the ethical end as itself the religious end. The difference between the ethical end apart from religion and the same end absorbed in and become religion is this: morality alone apart from religion is merely personal development, and right relation to other men. Taken by itself, the moral end can stand in its own right; it is and must be the highest human law, supreme over hedonism and every other human interest. But this merely human morality lacks something. Human beings are not everything. Comte's attempt to create a deity out of the human race as an ideal whole was necessarily a failure. The vast awful mysterious whole of things, the universe, confronts man continually. Religion is the great desideratum. This fills up the great gulf between man and the infinite. Under its sway the moral quality of human nature is regarded as the Divine law of our being: the command of duty becomes the expression of the will of God. Whether this desideratum has been or can be supplied we are not now to inquire. But at least we may recognise the fact that to a considerable proportion of the human race this desideratum has been met by means of their faith.

Religion, then, as the supreme end, is morality regarded as, and supplemented by, the relation of man to God. For if this relation is real, and in any manner or degree really known, it evidently includes more than merely human morality. Even for this morality there are new motives, new encouragements, new help. And over and above this obedience to the moral law of self-development and striving after human perfection there is the human relation to the Infinite and the Eternal, which has its own obligations, its duties, services, rewards and joys. But of this let us not speak here. Once Confucius was asked about death—"I do not yet understand life," said the sage, "how should I under-

stand death?" We have undertaken the task of examining ordinary human knowledge, of considering what it is, and on what grounds its validity rests. This task is not yet complete; and after our contemplation of the circuit of human knowledge we have now to count up our gains, and see what the sum and substance of them is. Until we have some satisfactory assurance that we have good grounds for our common everyday human knowledge we need not take up that great question—Has man any knowledge of God?

In the brief sketch of teleology which ends here, the main purpose has been to illustrate real knowledge, in contrast to the supposed absolute and abstract knowledge which has been found to be a misconception. A much fuller treatment of the topics here merely glanced at would be necessary were it our purpose to explore the extent and contents of real knowledge. But our aim is to apprehend the nature of knowledge, not to set forth all that is known. For the immediate purpose of this book the above outlines suffices. It shows that real knowledge is inseparably bound up with our real existence, and with the real existence of the world to which we belong. Were we to attempt to deduce from all the real knowledge actually possessed a conclusion as to the nature of reality as a whole, we should be undertaking the task of philosophy, and find ourselves entangled in controversies, which it is our aim as far as possible to avoid.

PART II.—CONCLUSIONS.

CHAPTER I.

NEGATIVE CONCLUSIONS.

IT remains now to gather into one view the conclusions to which the preceding investigation has led us; and to consider what these conclusions involve. We have reached, at any rate, some negative conclusions. To know what knowledge is not, is hardly less important than to know what it is. Awareness of our ignorance dispels false persuasion of knowledge, and guards against unwarrantable extension of such knowledge as we have.

(1) NO ABSOLUTE KNOWLEDGE.

Among the untenable notions which were exposed, the notion that knowledge, or some knowledge, is *absolute* is perhaps the most serious error. Like the underground stem of a creeping plant, this opinion exists unsuspected; and when unearthed in places, it is difficult to eradicate. The verbal expression of knowledge is absolute. We say "sugar is sweet," "snow is white," "man is mortal," without the smallest hint of limitation of the complete independence and self-sufficiency of these assertions. The ordinary thinker does not distinctly claim that his knowledge is absolute; but the habitual use of the absolute form of expression induces the belief that the most certain knowledge is absolute; and that such knowledge only can be the sure and trustworthy foundation of our beliefs in general. This opinion is supported by the obvious fact that reasoning requires a first premiss. At least one absolute first principle seems to be necessary for logic. Thus, though not often formulated in

a dogmatic statement, an impression is general that some of our knowledge must be absolute.

The one fatal objection to this opinion is the discovery that absolute knowledge does not exist in human experience. The notion appears to involve a contradiction; and therefore to be an impossibility. That knowledge may be absolute, it must be altogether independent of our poor human capacity for perceiving and reasoning. If it is in any way dependent upon us, be it only upon our passive receptivity, it ceases thereby to be absolute. But unless the alleged absolute knowledge is so far adapted to our intellectual capacity that we can receive it when presented to our minds, it cannot become our knowledge. Thus we are in a dilemma. If the knowledge is absolute, we cannot apprehend it: if it is apprehensible, it is not absolute. Everything which we intelligently apprehend comes to us, directly or indirectly, through our senses, or our mental activities. Surely absolute knowledge, if it is to get into our minds, must enter through one of these two avenues. But this is to say, that absolute knowledge, to become ours, must cease to be absolute, must become relative.

This *a priori* reasoning would go for nothing, if as matter of fact it could be shown that we have some absolute knowledge. We know too little of our own mental constitution, are too profoundly ignorant of the ultimate nature of reality, to be able to assert that knowledge might not be imparted to us in other ways than by the two avenues of sense and mental activity with which we are acquainted. If the scient, or the philosopher, could produce this absolute knowledge, could demonstrate its actual existence, objections would be silenced. As matter of fact the absolute knowledge is not extant. A vague assertion that there must be some such first principles, with a suggestion of some mathematical axioms or logical principles as instances, is still occasionally met with: but, as we have seen, there is nowhere a plain statement of the alleged absolute knowledge; and on the other hand, the non-existence of absolute knowledge is frequently admitted, and there seems to be a general agreement that all our knowledge is relative. These admissions

are sometimes unwillingly made; and here and there a philosopher strives, by hook or by crook, to prove that his favourite dogma has an absolute character. One selects the immediate perception of the reality of matter: another the logical law of contradiction. But these alleged instances fail to stand the test of criticism; and the individual opinion of a philosopher opposed or neglected by other philosophers, does not suffice to establish an absolute first principle. It is then a safe and trustworthy conclusion that man has no absolute knowledge. For who has it? and what is it? Surely, if it exists, it can be stated in words; and once stated, it will command the universal assent of all educated minds. Absolute first principles must be self-evident; if not, they would be useless as basis for knowledge. We conclude, then, that human knowledge is homogeneous. It does not contain within itself any peculiar knowledge different from all the rest, and so able to be the foundation of all the rest. Absolute knowledge is a fiction of the imagination, not altogether unaccountable. It arose from a supposed logical necessity, and because the nature of knowledge had not been studied. Its assumption helped to sustain confidence in our knowledge; until it was seriously examined; but now it must be dismissed. We have no absolute knowledge.

How does this conclusion affect our estimate of knowledge in general? Clearly, it is a considerable step towards knowledge of knowledge. There is no absolute knowledge: and at first sight this seems to leave all the knowledge which we have on one side, and to deny the existence of something, which, being a non-existent, has no meaning; and therefore its denial cannot aid us in any way in our endeavour to understand knowledge. But it has been thought that knowledge, or some knowledge is absolute; and if we can understand the effect of the renunciation of absoluteness, we may understand better what our knowledge really is. The word *absolute* indicates that in some way we apprehend the actual or possible existence of that which is independent of conditions and limitations, which is self-existent and self-sufficient, perfect within itself, containing all the reasons and causes of its own being. In all these senses of the word, our

knowledge is not absolute. We know only under conditions; our knowledge is limited by these conditions; it is insufficient to explain itself, to justify itself; it is and is perceived to be imperfect in its apprehension and interpretation of the reality. Not only do we perceive that we cannot comprehend the whole reality, we also find ourselves unable perfectly to understand any one part or aspect of the reality. Not one single assertion of our knowledge has absolute truth. Not one definition which we make exhausts the whole being and relations of its object. The renunciation of the claim to absolute knowledge is the confession that all our knowledge is imperfect, and dependent upon something outside itself.

By the renunciation of absolute knowledge nothing in our actual knowledge is lost, nothing is altered; only a mistaken estimate of the nature and value of knowledge is cleared out of the way. The naive absoluteness of the unreflective mind, which takes its knowledge as perfectly satisfactory so far as it goes, asks no questions about it, and sees no need for investigating its nature, was left behind when we set out upon our inquiry. Now, we are obliged to abandon also the tacit assumption that the learned, the philosophers, have already ascertained absolute first principles upon which knowledge is grounded. Philosophy, as we saw, has failed to justify this assumption. Bereft of this ground of confidence, we are compelled to conclude that knowledge of the whole reality is beyond the reach of the human intellect. If philosophy had commenced its labours by a preliminary study of the nature and grounds of knowledge, it would seem that much baseless speculation might have been escaped.

Our actual knowledge is not damaged by the acknowledgment that it is not absolute, nor grounded on absolute first principles. Nevertheless it is left in an unsatisfactory position. Knowledge is not less certain than before; but its certitude is unexplained and unjustified. As a feeling the certitude abides, but no logical ground for the feeling is apparent. Practically we have some certain knowledge; but we do not know why we are certain. We cannot connect this practical confidence in the validity of our knowledge with the infinite

whole of being, within which and in reference to which our knowledge exists. We have still to ascertain the nature and to discover the grounds of knowledge.

(2) ABSTRACT KNOWLEDGE.

Abstract knowledge is perplexing. It is a compound of two ideas, one of which tends to neutralise the other. Abstraction performs an imaginary operation upon an object of thought. The mind makes an affirmation respecting this object: this we call *knowledge*. But of what is it knowledge? Of the thing *as it is*, or of *the abstracted* thing, which does not exist in reality? If we say "of the thing as it is," that is not exactly true; for we have abstracted the thing from its real place in nature. If we say "of the thing as abstracted," there is no such thing. Again, if we say our affirmation refers to *our thought* of the thing, we thereby cut ourselves off from the real thing: we say with Locke, our knowledge is only of our own ideas. We seem to be threatened with shipwreck just at the close of our voyage. Abstract knowledge certainly exists. Much of our common and all scientific knowledge is of this character. To reject this knowledge would destroy the initial position from which we started out upon our investigation, namely, that we have certain knowledge. Nevertheless we cannot deny the mental fact of abstraction; and abstraction seems to tear to pieces the given reality, leaving us with detached fragments in our hands as objects of our knowledge. But the abstraction is only imaginary: it is a mental operation performed for our convenience, because we cannot well attend to more than one thing at a time; it does not pretend to make any alteration in the objects. Hence what we know does not really exist: what really exists we do not know.

Let us not give way to despair. We have not yet got far in our endeavour to ascertain the *nature* of knowledge. We are still thinking and speaking of something the nature of which we do not clearly understand. Abstraction and knowledge are ideas which seem to refuse to coalesce. Still we have some certain knowledge; and of this certain know-

ledge some portion appears to be abstract. Let us examine this *abstraction* more closely. We can distinguish two applications of the method; which may be called the scientific and the psychological. The first is that of our common knowledge of external nature, and of science in general. In this abstraction we single out an object or a class of objects from the whole panorama of visible and tangible things, devoting ourselves to the study of the selected object or objects, to the exclusion of all else which does not help to the understanding of the object; and ignoring for the time being the mind and its operations altogether. In this scientific abstraction we do not follow arbitrary caprice, but are guided by perceived distinctions in the given facts. In nature things are not only included and connected as parts of one whole: they are also spread out in space and time, and exhibit differences of material kinds. In this examination of the world differences exist as well as resemblances; separations are as real as cohesions. It is true that all things appear to be united in the infinite whole, and we can never get any one single thing absolutely detached from and independent of the rest. But to some extent, and for practical purposes, scientific abstraction is not merely a mental operation, but is a real correspondence to externally existing distinctions. So far, then, abstract knowledge is real knowledge—always bearing in mind that it is imperfect knowledge, that it falls short of the whole reality of the thing.

In self-observation also we employ the method of abstraction. But here it is not as it is in the external world, a discovery of divisions which really exist in the unity of the whole. In the mental sphere there is unity, and there are diversities. The diversities are sufficiently marked to be made to some extent separate objects of thought: but in no case whatever can one of these diversities be discovered, or even imagined, as a distinct individual being. Hence we have concluded, without hesitation and without qualification, that *there is no abstract knowing.* When we speak of abstract knowledge, we are thinking of known objects which are (mentally) abstracted from the whole given panorama; but it is not the knowledge which is abstract: the abstraction

comes first, is abstraction of the *things*, not of *knowledge.* So understood the phrase abstract knowledge may be tolerated. But knowledge as an abstraction from the mind itself is a pure fiction, which must be rejected altogether. Even the abstract knowledge of science is only real on the condition that its abstraction from mind is removed, and it is taken as the knowledge of real men, of Newton, Darwin, Helmholtz and others. This psychological abstraction is a serious danger. Throughout this book we have been using the method of abstraction in considering knowledge apart from other characters and aspects of mind. But so far as it has produced an impression that knowledge *exists* in isolation, the use of this method has produced a false impression. Knowing is inseparable from consciousness, from feeling, from volition, from mental action. In the unity of our conscious being we can discern many diversities of feeling and of activity. But all these diversities cohere together, glide one into another, appear, disappear, reappear, as aspects or phases of one living unity. How could we know apart from feeling? Feelings, the perceptions of consciousness, give us the terms or objects of our knowing. Without consciousness there would be no knowledge. Without feelings there would be no vision of, no contact with, things. Again, pleasure and pain, desire and fear, are the impulses to seek knowledge. Attention is commonly, if not always, volition. In seeking knowledge mental effort or striving is involved. Every way knowing is a mental state or quality, which cannot be abstracted from the unity of the mind. On the whole, then, we conclude there is really no abstract knowledge.

The difficulty of apprehending and accepting this doctrine will be lessened by an observation which, it seems to me, affords a clue both to the origin of the misunderstanding of knowledge, and to the right understanding of it of which we are in quest. We have knowledge long before we think about knowing. This knowledge is always growing, but the internal mental development is not much considered. Knowing is predominantly an outward look towards things, and is expressed by a series or collection of mental judgments respecting objects of thought. One judgment leads to another in a

succession of steps. We climb a ladder, mounting higher and higher, ever gaining a wider outlook on things in general. Now what we ordinarily think of as knowledge is the upward climb from one rung of the ladder to the next, and the new view obtained from the higher point. If we take a larger view of knowledge we note the immense advance from a point much below us to that at this moment reached. The view we take of knowledge *never goes down to the bottom of the ladder*. In other words, knowledge, as we commonly regard it, *begins from an already acquired stock of knowledge and means an addition to that stock*. This way of thinking about knowledge is not altogether due to want of reflection, because, as a matter of fact, we cannot get back to the point where knowledge first emerged from consciousness. Psychological investigation gives us firm assurance that knowledge did emerge from consciousness; but when and how it cannot tell. We cannot see down to the base of the ladder, as we cannot see its support above. What we usually mean by knowledge is *accretions* to knowledge: knowledge as a whole is not considered. Our thought being engrossed in the aspiration after more knowledge, we study knowing as the art of climbing upward. Knowing itself seems to be a framing of successive detached judgments; and to get systematic knowledge, a unity and whole of knowledge, we put these detached judgments together, and a science is the result. This way of proceeding having been followed for centuries, having led to splendid discoveries and immense increase of knowledge, it is not surprising that abstract objective knowledge has come to be regarded as the best, or the only knowledge. And yet, in spite of all our confidence in this recently acquired knowledge, the fact remains that we cannot see the base on which our ladder rests, nor on what it is supported above. And the ladder is one: every rung of it, including that upon which we stand at this moment, depends upon the unseen supports.

So long as we are satisfied with the mere possession and the pursuit of knowledge, we are not likely to investigate its nature; and so long as we do not investigate its nature, this habit of assuming abstract and objective knowledge to be true

and the only knowledge is not disturbed. The philosopher appears on the scene; he is not satisfied with possessing much knowledge and the prospect of more: he wants to know the whole in a rational way: continually climbing an unsupported ladder from the unknown abyss to the unknown height does not appear to him a rational proceeding. The philosopher's attempt to understand the All may appear presumptuous; but we common folk have also our dissatisfaction with this abstract knowledge. We crave some knowledge of the *whence* and the *whither;* for we find that to some extent we determine the course of our own lives; and we need to know what are the right ends to seek, and what the highest and best ends. Driven by this sense of need, we have been exploring knowledge to discover its nature; and have been led to the conclusion that *science*, taking this word to mean the systems of abstract and objective knowledge called sciences, is not real knowledge of the whole, and cannot even attempt a solution of the universal problem. This is a negative conclusion of grave practical importance; and it is advisable to review the reasoning upon which it is based in a separate chapter.

CHAPTER II.

THE NESCIENCE OF SCIENCE.

IN our former consideration of science, we agreed to understand by this word the knowledge contained in the sciences. As such, science is abstract objective knowledge; and consequently is not knowledge of things as they are. Of this we need not say anything more in this place, reserving the consideration of the relation of science to real knowledge for a subsequent chapter. But it seems necessary to draw attention to the negative conclusions respecting science to which the investigation has led, as these are directly contrary to widely prevalent opinions.

The first of these conclusions is that science is not a sum, a unity, a system of knowledge. While we mean by science the knowledge belonging to the sciences, this conclusion is plain and incontrovertible. A science exists by virtue of having a separate subject-matter. Between different sciences there are analogies; and the knowledge of one science can be helpful to the acquisition of knowledge in another science. But between the groups of sciences there are impassable chasms: over which hypothesis easily vaults in imagination; across which for knowledge there is no bridge. So far as we have been able to see there is no unity of knowledge, except the subjective unity of the knowing self. The abstract objective character of science cuts it off from this way of unity; and therefore the sciences are not one system unless this system can be discerned in, or constructed from, the contents of the sciences, without having recourse to their dependence on the knower. But the *raison d'être* of a separate science is the distinct diversity of its province or subject-matter—how, then, can it be possible to piece the sciences together into one science of everything? Take astronomy and botany, and try

to unite them. Astronomy treats of the celestial bodies and their movements: its great fact is the law of gravitation. Botany classifies plants, describes their parts and the functions of these parts, observes their distribution, their variations, their competition for room to grow and for nutriment, traces the origin of kinds to the survival of the fittest. Can you from the facts and laws of astronomy infer the existence of a lichen? Or, reversely, will observation of plants and their movements conduct you to knowledge of the law of gravitation? It is true that there is obvious connection between the objects of the two sciences. All plants belong to the earth, and depend upon sunshine. So far as we can see, everything is somehow connected with everything else. But the question is—*how?* In astronomy this question is answered to some extent by the law of gravitation: this is the *science*, the *knowledge* of astronomy. In botany, this question is answered to some extent by the laws of cell-growth. The laws of cell-growth cannot be deduced from the law of gravitation, nor can the law of gravitation be deduced from the laws of cell-growth. The scientific imagination, or power of guessing, can jump to the conclusion that the molecules of the vegetable cell move only in obedience to the law of gravitation: but this is not science. I doubt whether it is even imagination, whether one who propounds the verbal proposition has any *thought* in his mind behind the words. However that may be, in sober matter-of-fact, this sort of thinking is not science, is not knowledge. The science of astronomy begins with given perceptions of sun, moon and stars: the science of botany begins with given perceptions of grasses, shrubs and trees. Neither science goes behind its data, nor has exhausted the contents of its data. If you ask for a science which brings into one system all the known facts of astronomy, botany, chemistry, and the other separate sciences, you ask for what does not exist. Strictly speaking, there is no such thing as *science;* there are only sciences. To take the term science as a unity, its special signification must fall away; and science then is just knowledge; and knowledge, so far as we can perceive, is only a unity of knowing, that is, a unity as an activity of one conscious knower. So far as its objects are

concerned, it is a multiplicity of diversities which cannot be brought into a unity. Knowledge as it exists in human minds is not a system of judgments, but an indefinite collection of disconnected judgments; and of minor systems, in which some of these judgments are brought together.

Nevertheless this notion that science is a unity has been a potent influence—it would perhaps not be incorrect to say the most potent influence—upon the thinking of the second half of the nineteenth century. There seem to be signs that this influence is now somewhat declining; it may be that it reached high-water mark ten or twenty years back. But it is still so strong that, according to a widely-prevalent opinion, it is almost an axiomatic truth that science is the surest certainty man possesses, and the supreme authority in all matters with which the human intellect is concerned. This is a grave situation. Something called "science" poses as the guide of human thought; and upon examination it seems that there is nothing but this name "science," with no reality behind it. Can it be that for more than a generation many thinkers and leaders of thought have been following a phantom of their own imagination? But if it be not so—then where is this *science?* And what is it? Clearly it is not the knowledge contained in the sciences; for this knowledge is only of the subject-matters to which the sciences are confined. And if it is not this—where else is there any science at all?

Unpalatable as it will be to some, and astonishing to many, there is no getting rid of our conclusion that the notion of science in general is a false notion; and therefore a source of erroneous thinking. So serious a case demands the most earnest consideration; and a conclusion which will be so unwelcome to many wants all the arguments which can be adduced on its side. Let us then once more consider this science in general, which is to be the judge of reality. And there is another reason for this reconsideration, in the fact that since the former chapters on science were written two books have been published, from which we shall receive much assistance.

Neither of these authors supports the assertion that science

is not a unity. On the contrary, one holds that science is "a consistent body of knowledge".[1] The other feels the difficulty of defining science, which is "all intelligent knowledge"; admits that the term science "has certain limitations," partially indicated by the description, "science is the observation of phenomena and the colligation of the results of observation into groups";[2] and by the use of the one word he too implies that science is a unity. Professor Dolbear seems to identify science with "physical knowledge" in his conclusion that "all phenomena are reducible to nothing more mysterious than a push or a pull";[3] and at the same time by his reference to "the Unseen Universe," and his semi-mysterious allusions to physical phenomena which "sometimes take place when all the ordinary physical antecedents are absent," and to "miracles,"[4] he intimates his belief in a region outside the range of science. Dr. Hill is more explicit. In his opinion the limitations of science are in some directions clearly marked. "Science never seeks to determine the relative value of phenomena in the scheme of the universe—in the cosmos, as our intelligence figures it. Still less does science venture to suppose that she can throw light into the world above the world, the All-intelligent, of which our intelligence is but a dependence."[5] Again, he says: "There is another sphere, the sphere of consciousness or the world of spirit—in the sense in which St. Paul uses the term spirit, the 'active reason' or intelligent soul of Aristotle—for which science has no passport. . . . We cannot measure love or hate or duty in calories or foot-pounds, or *ampères* or any other units, and when we enter the realm in which emotions hold sway we have to leave our science behind."[6] In fact, then, both writers recognise that science is not a universal knowledge, that it has not sole and supreme authority, that there are regions into which its light does not penetrate. Practically they mean by science physical knowledge; observation of and judgments respecting visible and tangible things.

[1] *Matter, Ether and Motion*, by A. E. Dolbear, Ph.D., 1899, preface, p. vi.
[2] *Introduction to Science*, by Alex. Hill, M.D., 1900, p. 3.
[3] *Ibid.*, Preface, p. v.
[4] *Ibid.*, pp. 353, 354.
[5] *Ibid.*, p. 6.
[6] *Ibid.*, p. 14.

In Dr. Hill's treatise the *nescience* of science is frankly acknowledged. By nescience I mean here *felt* ignorance. A child is immensely, but all unconsciously, ignorant of many things. The scient, who is not wholly destitute of philosophical perception, is conscious of his ignorance. He knows that nescience is the inseparable shadow of his science. Everywhere and always science leads him to the point where he is compelled to say, in respect to the very subject-matter of his science, "here I do not know". These points are, on the one side, the data and the presuppositions with which he starts; on the other side, the last conclusions to which he arrives. Dr. Hill says: "An astronomer is compelled to use the terms Time, Space, Movement; yet he is as little able as a child to form a mental picture of the absolute meaning of the words. . . . The first step in chemistry or physics demands the recognition of a distinction between Matter and Force. But what is matter, and what force? Matter is that upon which force acts; force is that which acts upon matter. . . . Time after time he traces the chain of inductions back, and still farther back, to find himself before the weary paradox, that ultimate matter is force, and ultimate force is matter. . . . The most learned physicist becomes as a little child."[1] "The biologist . . . is farther off than ever from finding a form of words which will define what life *is*."[2] "The psychologist . . . at the end of his work exclaims: 'But this is only reflex action. It was consciousness that I set out to investigate. All the researches which I have been carrying out serve merely to throw light upon the physiology of the nervous system. They teach me nothing about the working of the mind. Truly I have found out a good deal about the apparatus which the mind employs, but I know as little about the mind itself as when I started.'"[3] Thus in regard to all its own fundamental and indispensable concepts, Space, Time, Matter, Motion, Force, Mind, science is brought to feel its nescience. Even the scientific term Law has no clear fixed meaning. "A law is nothing more than a docket into which we collect phenomena which have something in

[1] *Introduction to Science*, pp. 12, 13.
[2] *Ibid.*, p. 13. [3] *Ibid.*

common."[1] "It is a convenient term which men of science use in classifying their observations, often as a synonym for hypothesis."[2] "The worship of Law has done some harm in science. . . . No laws stand between God and the phenomena of His creation."[3]

On the other hand, science at its farthest advance conducts to, as it began from, nescience. "We stop perhaps too frequently to wonder at our own success in subjugating nature, and the exceeding rapidity of its recent advance. Yet advance brings us no nearer to the end of our labours, for the more we know the more we see of what remains to be known. Every problem laid at rest gives birth to two new problems which did not present themselves to the mind before."[4] And it is not only that new questions arise, but sometimes a new conclusion "throws doubt upon much that has been accepted as established knowledge."[5] Professor Dolbear gives us an instance almost staggering to a mere common-sense mind. "Within the past fifty years the great geometers have made some very wonderful discoveries—one might say, astounding discoveries; for they tell us that we do not know that the sum of the interior angles of a plain triangle is equal to a hundred and eighty degrees; that we do not know it within ten degrees, if the triangle be a very large one, such as is formed by the spaces between remote stars and the sun; furthermore, we are assured that for all we know, and therefore for all we can reason from, space itself may be curved so that if one were to start in what we call a straight line in any direction, and travel in it on and on, he would find himself after a long time coming to his starting-point from the opposite direction; that what one would see if his sight were prolonged in any direction, would be the back of his own head much magnified. Methods have been proposed for discovering if it be true or not. Some folks have called this nonsense, and have used descriptive adjectives to express their contempt for it; but none of those who have thus spoken of the new geometry are themselves mathematicians, and one is therefore left with

[1] *Introduction to Science*, p. 15. [2] *Ibid.*, p. 18.
[3] *Ibid.*, p. 19. [4] *Ibid.*, p. 41. [5] *Ibid.*, p. 125.

the fair inference that they did not know so well what they condemned as did the mathematicians who reached the conclusion." [1]

Accepting the fact that there is a new geometry, as there is a new logic and a new psychology, one must confess that these novelties tend to upset the common-sense mind's confidence in science. Instead of sympathising with Professor Dolbear, who seems to think that science is on the eve of some great discovery, that to-morrow or the next day we may wake up to find ourselves in possession of omniscience, at least in respect to the physical world, I submit that the history of science, far from encouraging this sanguine expectation, demonstrates that the advance of science is not an increase of knowledge only, but also to no small extent a displacement of a supposed knowledge by a consciousness of nescience. Astronomy is a grand illustration of this. To Plato astronomy gave a thinkable system of the universe: a system of concentric spheres, in which earth, sun, moon, planets, stars, had their definite places and moved in harmony. Since Copernicus, that supposed knowledge has disappeared. Now astronomy is true knowledge of the solar system—a tiny fraction of the universe—but has no conception whatever of the system of the innumerable celestial bodies beyond. Before Darwin, botany and zoology had a supposed knowledge of a certain number of immutable species, called into being once for all; since Darwin, this supposed knowledge is displaced by the knowledge that species are evolved from preceding species; but "the question which biologists are debating at the present time is, What is the cause of evolution?" "Variation is a fact, whatever may be its cause. . . . Of the variability of the zygotes we know nothing. We only know that the individuals into which they develop vary." [2] But, hitherto, while we have been forced to confess that everything begins and ends in inscrutable mystery, the sciences seemed to possess some fixed knowledge which could be trusted with perfect confidence. When Euclid's axioms and logical deductions therefrom are called in question, even this

[1] *Matter, Ether and Motion*, p. 57: see also pp. 356, 366.
[2] *Introduction to Science*, pp. 99, 101.

residue of certain knowledge seems to be threatened. For my part, however, I am not prostrated by this fear. I can wait with patience until the new geometry has tested its methods for the discovery of its own truth or error: in quiet confidence that the result either way will, like the great discoveries of Copernicus and Darwin, adjust itself to the primary fact with which we started—namely, that we have some certain knowledge. Then as now the fact will be accompanied by its inevitable shadow—the consciousness of a surrounding and interpenetrating nescience, the nescience of the finite intellect in the presence of the infinite and eternal reality.

The failure of science to become real knowledge of the reality is demonstrated by psychology. The reality includes consciousness, the consciousness includes knowledge; these three are inseparable; and on this ground an abstract objective knowledge which cuts itself off from consciousness is not real knowledge, does not know reality. Dr. Hill's treatment of science splits upon this rock. He identifies science with knowledge: all intelligent knowledge is science: and yet he asserts roundly that there is no science of consciousness. "Science cannot penetrate into the world of consciousness." [1] "A man's consciousness gives him no more information with regard to his science, than his senses give him with regard to his consciousness. The two worlds are absolutely and permanently distinct." [2] This is our old bugbear—the theory of psycho-physical parallelism. How, then, can man have any knowledge at all? Yet Dr. Hill not only believes in science: he asserts that "the man of science, in common with thinkers trained in other ways, knows that he has two sources of information—his senses and his inner consciousness. When reflecting upon the mental processes by which the materials supplied by the senses are worked into thought, the Mind is watching its own activities. By self-study man acquires a knowledge of knowing, thoughts about thinking. He knows that he *possesses* consciousness. It is not that he is consciousness—merely a concomitant of a

[1] *Introduction to Science*, p. 14.
[2] *Ibid.*, p. 26.

certain kind of nerve-activity. He owns a consciousness which he can direct and control; from which it follows that there is a He to own it."[1] These few lines comprise a respectable statement of the grounds of a reasonable psychology—not a psychology without a soul. It is clear, then, that if science means all intelligent knowledge, this psychology is scientific. Yet Dr. Hill inexorably excludes it—why? It appears upon examination that he really means by science not all intelligent knowledge, but only the abstract objective knowledge of physical science. Science is "limited to the world of sense"; it cannot "barter its facts, gathered from the external universe, for the equally real facts which the individual ascertains by self-examination";[2] "it cannot proceed farther than the five senses";[3] "science is measurement";[4] "for working purposes the man of science accepts the axiom that 'all statements which cannot be confronted with objective tests are false; if no test can be applied to them they are equally true and false to him'. Thinking about them is a waste of time. Science is the elaborated product of observation."[5] Putting together these scattered remarks, we see clearly what he means by science. With him science is not "all intelligent knowledge"; it is physical science only; or, more correctly, his meaning of science is identical with that previously adopted in our inquiry—it is the science of the well-established sciences, from mathematics to biology. True, he names logic, psychology, ethics and æsthetics as sciences—although all these belong to the consciousness which is banished beyond the boundaries of science. This inconsistency does not affect the fact that science is, in his thinking, knowledge of the material world, and that only. Science taken in this limited meaning is of course debarred from even attempting to frame a universal theory of the whole reality.

In *Matter, Ether and Motion*, a new theory is offered which one might call "etherialism". Ether is the name of a medium or substance which is not known by the senses, but, if known at all, by inference. Light, we are taught,

[1] *Introduction to Science*, p. 25. [2] *Ibid.*, p. 11.
[3] *Ibid.*, p. 23. [4] *Ibid.*, p. 39. [5] *Ibid.*, p. 25.

travels from the sun to the earth by waves, at the rate of more than ten millions of miles in a minute. "One cannot conceive of a wave movement when there is nothing that can be moved; hence the existence of a something called *ether* is inferred."[1] To perform the function of conveying light waves, ether must be conceived as filling all space continuously, without interstices; as frictionless and not subject to the law of gravitation; therefore it must not be called *matter:* it is immaterial. Luminiferous ether may be supposed to convey other motions also, electric, magnetic and chemic waves. Still further, ether not being subject to the law of gravitation, may be thought to be the cause of gravitation. Out of these three concepts, matter, ether and motion, taking space and time for granted, a universal theory of all physical phenomena can be imagined. This new theory can be carried a step farther: let matter be supposed to be vortex-rings in the ether. These vortex-rings once started in the ether, that being a frictionless medium, the vortex-ring motions would be permanent and could not be transformed. If the atom be itself a vortex-ring, "it follows that in the absence of such form of motion, there would be no atom—no matter: the substance out of which the ring was constituted would exist, but without any of the characteristics that we assign to matter in any of its forms". "What constitutes an atom is not so much the substance it is composed of as the motion involved in it. Such *an atom is a particular form of motion of the ether in the ether*, in the same sense as what is called light is a form of motion of the ether in the ether. One is an undulation, the other a vortex. One we call an ether wave, the other we call matter: both involve energy, and both have properties. Thus one after another of the properties of matter are found to be resolvable into ether motions, ether being the primal substance and matter only one of its manifestations."[2]

Etherialism, then, reduces all physical substances and forces to one substance, ether, and one force, movement. Ether and motion make the world. Combine them into

[1] *Matter, Ether and Motion*, chap. ii. [2] *Ibid.*, pp. 350, 351.

one, as moving ether; the All is One. This is a revolution in fundamental conceptions. Matter has disappeared. Atoms are not *hard*, have no *colour*, must not be thought of *as impenetrable*, nor as possessing *inertia*.[1] In a word, *matter* as hitherto understood does not exist. In one respect this new theory removes a difficulty which attended the conception of matter: the vortex-ring atom is *not* infinitely divisible. "Break such a ring in two and there is not left the two halves; not only the ring is broken, but each part at once vanishes into the indistinguishable substance that composed it; and all the properties that characterised it as a ring have vanished with it."[2] But nothing is destroyed: the ether remains. All is ether: there is nothing but ether, at rest or in motion. Or, perhaps we may equally well say—seeing that the ether is only assumed as the vehicle of motion—all is motion, and there is nothing but motion. Professor Dolbear appears to favour a combination of the two: motions in ether, or moving ether, as the substance or reality of the universe.

Reading the exposition of the theory in its various applications, one is for the moment dazzled and fascinated. Here we seem to have a concept which embraces and explains everything. In sober reflection we become aware that this is not knowledge, but imagination working by hypothesis. Ether, if it must be assumed to exist, takes its place in the list of the ultimate unintelligibles—space, time, matter, motion, force, cause. "It may truly be said that in a philosophical sense, nothing has been explained."[3] A conjectural explanation of one ultimate mystery, *matter*, has been obtained by the invention of another ultimate mystery, *ether:* we have no more *knowledge* than we had before. Ether being sensibly imperceptible, and the concept being arbitrarily imagined so as to answer all purposes for which it is wanted, etherialism has advantages as a theory when compared with materialism and idealism. Being immaterial it does not leave us at last with something hard, solid, visible, tangible on our hands, which cannot be got rid of, cannot

[1] *Matter, Ether and Motion*, chap. xiv.
[2] *Ibid.*, p. 42. [3] *Ibid.*, p. 353.

be transmuted into spiritual being. Being spatial and admitting of movements within itself, it offers an ample field for sensible phenomena, while not itself grossly conflicting with a spiritual character. It can be conceived as the basis of physical life,[1] and even of mind and consciousness,[2] without involving the harsh opposition which we feel between spirit and matter. But ether is still spatial and its movements are from place to place; it is still an abstract objective concept, and the difficulty of combining its spatial and mechanical character with the nature of consciousness is not removed. If ether really is the One and the All, we do not *know* that it is this; we cannot really even imagine the unity, and the diversities as arising from the unity. Scientific imagination has its limits. Not even its power can dispel the shadow of nescience which envelops and underlies all science.

Are the *limitations* of science definable? If we take science in its stricter sense as the actual knowledge contained in the sciences, science is limited on the one hand by the ultimate unanalysable data of sense and concepts of reason with which it begins, upon and by which it carries on its work. On the other hand, no one can foresee how far science will go in its onward march; there seems to be no reason why it should not go on for ever. The finite capacity of the human intellect seems to threaten a collapse under the immensity of its task. "No one nowadays can hope to gain a comprehensive view of science as a whole, still less to abstract from his science lessons which will guide him in shaping his course in life."[3] "The tendency of us moderns is perhaps towards immense knowledge and hasty, ill-considered generalisations. Meagre conclusions from abundant data, rather than wide conclusions from meagre data. It is the inevitable result of the vast accumulation of knowledge and the multiplication of workers engaged in research. As we sometimes wonder when the increase of traffic in front of the Mansion House will lead to its arrest, so we are tempted to

[1] *Matter, Ether and Motion*, chap. xi.
[2] Shadworth Hodgson, *The Metaphysic of Experience*, vol. iv., p. 394.
[3] *Introduction to Science*, p. 42.

ask whether the prosecution of research will not some day cease altogether, owing to the multiplicity of workers, and the consequent impossibility of anyone informing himself as to the work which others have done."[1] This progress of science, however long it may continue, is always limited in one respect. As science is in its nature fragmentary, it can never be more than a collection of fragments. By no possibility can science ever become knowledge of the whole. This certainty is not derived from an actual knowledge that the whole is infinite: we have no such knowledge. It is based upon the inherent character of science, upon its abstraction and objectivity. Science begins by leaving out part of the whole, and being what it is, can never remedy the omission. We know that science can never reach so far as to knowledge of the One and the All.

Science, however, is very commonly used in a loose and improper sense, not only for intelligent knowledge in general, but for theory, for hypothesis, for the speculations of the scientific imagination. One must not be too severe upon this. The line which divides science from hypothesis is nowhere plainly marked; and it has even been boldly asserted that all science is hypothesis. When once we pass beyond actual certain knowledge into the region of probability and possibility, who is entitled to erect barriers, and to assert that within this region speculative theorising is legitimate, beyond this it is irrational? One may point out that to call speculation upon things in general by the name of science is incorrect and misleading; but this is not to fix a limit to the rightfulness of such speculation, if called by the more appropriate name, philosophy. We can also say that this theorising upon things in general, whether called science or philosophy, if and so far as it is carried on in the spirit and by the methods of science, and by these alone, necessarily leads to error, cannot produce a true theory. For science being essentially abstract, objective, fragmentary, is by its nature incapacitated from furnishing a rational and trustworthy theory of the All.

[1] *Introduction to Science*, p. 47.

Our inquiry, then, has led to the following negative conclusions:—

(1) Man has no absolute knowledge.

(2) His abstract objective knowledge is not knowledge of the reality *as it is* in its unity and all-comprehensiveness.

(3) Science is not a unity nor a system, but merely a general name for a number of separate sciences.

(4) All attempts to frame a tenable theory of the universe by means of abstract objective knowledge, or science, are necessarily doomed to failure.

(5) The area of thought cannot be divided into two regions, of which one, the known and the knowable, is to be assigned to science, whilst the other, the unknown and unknowable, is left outside knowledge for philosophy and religion to deal with as they can.

These negative conclusions, it must be noted, refer to human knowledge taken as a number of intellectual judgments, without further consideration of what the nature of our knowledge really is. We have not yet said the last word about knowledge.

CHAPTER III.

REAL KNOWLEDGE.

CRITICISM of abstract objective knowledge leaves the certainty of knowledge intact. Twice two are still four; the earth moves round the sun as before; water continues to be a compound of oxygen and hydrogen. Nothing is changed. Actual or real knowledge is not something other than the old familiar knowledge. We have only one knowledge. The criticism has shown not that abstract knowledge is untrue, but that knowledge is not really abstract. The method of abstraction is indeed inevitable. We cannot take in the whole of things in one field of view; we cannot embrace everything in one comprehensive judgment. The fault of abstract objective knowledge is not in itself, but in our taking it for what it is not, namely, as a real knowledge of the nature of things. The error is not forced upon us: we fall into it through inattention. Its antidote is found in a thoughtful return to a contemplation of the whole given fact; and an effort to restore by synthesis that oneness of all truth which is temporarily forsaken in the abstraction.

Can we define knowledge? What do we mean by *definition?* In this question we employ a word "meaning," for which also we require a meaning. These words, "meaning" and "definition," aim at answers to two questions—What *is* a thing or quality? and, What are we *thinking* that it is? The first question looks outside at the thing—What is *that?* The second question looks within the mind—What do I *think* the thing to be? Meaning and definition both are thinkings. In the one case we scrutinise and express our thought of the thing; in the other the thing as apprehended by our thought. In both proceedings finality is unattainable. A meaning can only be made clear by means of other meanings: a definition

involves terms which themselves require definition. We come to an end at last, not by arriving at meanings and definitions which are self-evidently clear and complete, requiring no explanation, but in the presence of the infinite and the inexplicable. Definition, then, is an attempt to think a thing as it is, and to describe it fully and accurately; but it is an attempt only; it never is perfectly successful. Knowledge might be defined as a collection of definitions; but this definition of knowledge would suit only the abstract knowledge of science; in which material things occupying space are dealt with. These seem to us to have separate individuality, which makes them capable of definition. But even here definition fails us when we reach the ultimate concepts of science. When the object of thought is not of a spatial character, definition is not so easily attainable. Knowledge is one of these cases. Being a permanent quality or mode of existence of the mind itself, and in intimate union with other qualities, feeling, volition, purpose, energy, it seems likely that an attempt to define knowledge separately may do more harm than good. Is it compulsory to frame a definition? Other mental qualities, consciousness, volition, love, fear, etc., are familiarly known in immediate experience, and so is knowledge. It is questionable whether anything is gained by verbal definitions of them.

After these observations we can criticise proposed definitions of knowledge indulgently—prepared to find the best not wholly satisfactory, and the inferior attempts not altogether valueless. Locke's definition—knowledge is the agreement between our ideas—is so far true, that when knowledge is expressed by a judgment, its terms must be compatible. Its defect is that it makes knowledge *only* a relation of ideas; leaving the things out of account. The usual definition—knowledge is the agreement of mental judgments with the reality—is free from this defect; but it is open to the serious objection that it implies an original separation between thoughts and things which, once admitted, cannot be bridged over. And yet the definition is not without its justification and its use. Taking knowledge as a mental judgment, or a collection of such judgments, it must be such that it does

not conflict with reality. It seems to be rather a criterion than a definition of knowledge. If we have knowledge it must harmonise with the real object; but this does not tell us what knowledge *is*.

As a brief expression of the meaning of knowledge, the phrase "the interpretation of consciousness" has been used. This is not a definition, but it has the merit of calling attention to that dependence upon consciousness which is the fundamental fact of knowledge. Apart from consciousness no understanding of knowledge is possible. Consciousness is the bridge which connects knowledge with reality. Consciousness itself is a reality, and it is consciousness of a reality beyond itself. Knowledge, whether definable or not, can only be understood by those who have it. At the stage of development when the knower is aware of his knowledge and intelligently reflects upon it, he is already aware that he is conscious of himself and conscious of an external world. It is only at and from this stage of development that the attempt to define knowledge is possible. From this point of view we may perhaps venture to describe knowledge as an affection and activity of the living human mind which, being immersed in and itself a part of reality, perceives the nature of the reality more clearly and more fully than these are perceived by the prior consciousness. Consciousness no one pretends to define; but all agree that consciousness is an awareness of being, of that which is, of the really existing. Knowledge, it seems to me, is consciousness raised to a higher power; both consciousness and knowledge are perception; but knowledge perceives more clearly and more fully. It would be premature, however, to insist upon any definition or description while our study of knowledge is unfinished.

More important than the framing of a definition is clear vision of the points in which real knowledge differs from the prevalent notion of abstract knowledge. These have been already noticed, but need to be emphasised. By real knowledge we mean the actual knowledge which we ourselves and other men and women have and have had. The knowledge is the same as that which has been supposed to be

abstract and objective; but it is not really abstract, not really objective. Knowing really is a subjective affection and activity; really is inseparable from the concrete reality of being. Our knowing is a state and activity of our mental being. The word *knowledge* taken abstractly produces a false impression. Knowledge is *ourselves knowing*. This is the first return to the reality which is required as a correction of the imperfection of abstract knowledge. But there is a second correction not less important. Knowing really is inseparable from the whole mental life. It is not a separate faculty; it is not a separate function; it does not exist and cannot operate by itself as an isolated entity or activity. The abstract view regards knowledge as a purely *intellectual* function, acting by itself. Intellect or reason is spoken of as though it were a thing-in-itself. It is torn away from its real place as a phase or character of the living conscious being, and held apart as a distinct entity having rights and powers of its own; and by some it has been regarded as possessing supreme authority. It is as though the anatomist should dissect out the brain and nervous system, and holding it out to view should assert—There you see the *real man!* This isolation of the intellect totally misconceives real facts. Feeling, knowing, willing, acting, are inseparably one. According to the abstract view, *feeling* is depreciated; is looked upon as a fertile source of errors, and in any case as destitute of authority in matters of fact and of reason. Our inquiry has shown us that this way of thinking is a grave error. Feeling is the ground and source of all knowing; and knowing is inseparable from feeling. Kant *almost* recognised this truth. In spite of his devotion to *pure* understanding and *pure* reason, he was obliged to acknowledge that these are nothing but the blank forms of thinking: all real knowledge, he admitted, is derived from experience. Instead of being apart from and superior to feeling, knowledge is dependent upon, and in a way subordinate to consciousness. Consciousness comes first; consciousness provides knowledge with its data, and knowledge when attained has to return to the facts given in consciousness for its verification. Feeling and knowing, then, are inseparable; that is, there is no

knowing apart from feeling. And if knowing is a clearer and fuller perception of the nature of reality than feeling is, on the other hand, feeling is the closer contact with reality, and can lay firm hold where the keenest intellect has no clear vision. Nor can knowing be separated from volition and activity. We will to know, though often we will in vain. Knowing is a mental activity ; judgment, affirmation, is a mental act. Exactly how all these diversities, feeling, willing, knowing, acting, are united in the one mind, psychology does not seem to be able to explain ; but we may safely affirm they are diversities in and of the unity ; certainly they are not separate entities. Knowing is one phase or mode of the being of the whole mind. It is a phase or mode which is sufficiently diverse from other phases to be separately considered in our thinking ; but it can never be actually separated ; it can never be understood except as a phase or quality of the unity, always in combination with other phases.

Still further, knowledge as it really exists, as it actually is in human minds, cannot be separated from the totality of being which we call the reality. Knowledge really is concrete, not abstract ; it is in contact with, not abstracted from, real being. While according to the abstract view the difficulty is to bring knowledge and reality together, when we take knowledge as it really is we find that we cannot separate them. The man is within, not outside the universe. He is not an abstract spectator, sitting apart watching a panorama passing before his eyes, but at a distance from him. Through his bodily sensations and mental feelings he has an immediate vision of and contact with the external world ; and the reality in respect to which he judges he first of all sensibly perceives in consciousness. Nor is reality only external ; he himself is a real being. This reality of the self comes specially to light in knowing. The human mind wills to know, strives to know, can do much towards the achievement of knowledge. But both in the pursuit and in the possession of knowledge it is compelled to recognise the presence of a reality greater and more powerful than itself, which it must obey. Knowledge must submit to the facts. We cannot reason as we will ; we must reason according to the laws of thought.

What plainer and stronger evidence can we desire or imagine that we human thinkers are actually within and of the reality, dominated by it ; and that our knowing also is itself a part of the reality ? Knowing is the mind's perception or apprehension of reality ; just as consciousness is ; only knowing is a later, more developed consciousness, which sees and understands where the primitive uninstructed consciousness could but feel and wonder.

Real knowledge is the knowledge which we actually possess, looked at as it is in connection with other states and phases of mental life ; or more correctly, we should say of human life : for the body too has its use and its share in knowing. To break clear away from notions to which we have long been habituated, and to get a vivid conception of a new notion is difficult. Let us try the effect of an illustration. A tall factory chimney rises yonder under the green hillside. What is its height ? I can imagine various ways of ascertaining. Measure its shadow at the moment when the angle formed by a line joining the end of the shadow with the top is 45° ; or measure a base line and take two angles ; then a trigonometrical calculation will give the height. But this is only abstract knowledge ; and I am still ignorant of the chimney's height. Thinking about the chimney brings an exciting story to my memory. A lofty chimney had been built : the workmen descended, one man alone remaining on the top to assist in lowering the scaffolding. When all was done this man perceived too late that the rope by which he should have lowered himself had been forgotten. A crowd speedily gathered below the column : up above the poor fellow, a prisoner on the giddy height, seemed distracted and on the point of throwing himself down in desperation. The horrified spectators were at their wits' end. Could ladders be got and joined together ? Could the scaffolding be put up again in time to save him ? Suddenly a woman came up, and in a clear, calm tone called out : "*John, sit down and unravel your stocking*". She was his wife. John sat down. In a little time a slender thread descended to outstretched hands : the thread pulled up a string : the string pulled up the rope : the husband lowered

himself safely, and was clasped in his wife's arms. This is an instance of real knowledge. The knowing began in the midst of the reality to which it belonged. The woman had knitted those stockings herself, and knew how many skeins of worsted went to the pair. Her "presence of mind," stimulated by love, hit directly upon the right means to the desired end. Feeling and volition were involved in the thinking, and in closest touch with the facts of the situation. The whole incident transacted there between the solid ground and the blue vault of sky, with all its spiritual and all its material factors, was a unity, an indivisible event, in which the wife's knowing appears as an inseparable element, distinguishable in thought, but not separable in reality, from the rest. It shows how real knowledge is born in a real mind, under the stimulus of real need, in closest contact with real facts, and is a means to a real end. From first to last there is nothing abstract here, nothing which exists by itself apart from the rest; the whole is one reality.

What has been observed in respect to the knowledge embedded in this "sensational" story, is equally true of every bit of real knowledge belonging to the sciences. Abstract trigonometry measures no real heights. In the trigonometrical survey, real men set to work with theodolites and measuring chains; they measure real distances on the solid ground; they take angles by actual observations. And in every science, from astronomy to zoology, real perceptions of the senses are the indispensable basis. The absence of this sensuous basis is the cause of the peculiarity of mathematical science. Its reality is mental, logical, not physical. And in mathematics we have a signal proof that abstract knowledge is not real. The reality of mathematics lies wholly in the mental operations and conclusions; and when we turn from these to the objects of the science, empty space and time, abstract number and quantity, these are hopelessly unintelligible. It is true that the calculating rules of mathematics can be applied to real masses and motions; and here again the sensuous perceptions are the relations to reality which make such knowledge real. In the sciences this dependence upon perception is not overlooked: on the contrary, nothing is

insisted on more constantly and more strongly. Science glories in being firmly based on visible and tangible realities. The direct observation of phenomena is its first work; and this observation is a succession of real perceptions in which the living mind is in immediate contact with the reality. Experiment is a resort to perceptions under arranged conditions. Verification is a fresh return to perceptions, to test thereby conclusions derived from former perceptions. "The clearest definition of the aim of science is that it seeks to know Nature by personal contact."[1] An abstract conception never satisfies a scient: he must and will have an immediate sensible perception of the fact represented in his thought: unless he can somehow connect his thinking judgment with the sensible reality he accounts it as a mere hypothesis. If this be a true description of science, then surely the one certain truth of science is that it holds good, is real knowledge, only in reference to these real facts upon which it is based. Sever the connection between the abstract science and the real observed universe, the science is naught, it has no longer any significance, it is not knowledge.

The first positive conclusion we have reached is that real knowledge is a state or mode of the conscious being of real living men and women. It is that state of being in which each one of us can and does say "I know" in reference to actually existing things and events. It is not anything separable from a living human personality. Apart from the self there is no knowledge.

The second positive conclusion is that this real knowing is a knowing of real persons, real things, real events. As there is no objective knowledge—that is, no knowledge outside human subjects: so there is no abstract knowledge—that is, knowledge which is cut off from the real world in which we live.

Knowledge is one mode of the union of the knowing mind with the known reality. Consciousness or feeling is another mode of this union. There may be other modes of which we are ignorant; but of these two modes we are aware. Know-

[1] *Introduction to Science*, p. 10.

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[1] *Introduction to Science*, p. 10.

ledge is consciousness, and something more ; it is a consciousness which has attended, reflected, and attained to intelligence or understanding.

The third positive conclusion is that the knowing and the known are united in the reality. There is no need to bring them together, for they never were, nor can be, separated. There is nothing whatever which comes between the knowing mind and the known reality. The knowing itself is just the mind's vision, grasp, apprehension, comprehension, of the known.

Such are some of the results of our investigations into the nature and knowledge. They may seem bald and unsatisfying. But they appear to be true—which is the chief matter. It may be that there is a greater significance and value in them than is evident at first sight. At least they deliver us from the embarrassments and misleading tendencies of false notions of knowledge. And there is yet something more to be said.

CHAPTER IV.

THE GROUNDS OF KNOWLEDGE.

AT the commencement of this inquiry, in the attempt to discern clearly what it was that we were seeking to understand, the purpose of the inquiry was expressed by saying that it had for its aim the ascertainment of the nature, grounds and validity of knowledge. This threefold expression involves three terms, no one of which at that time was clearly apprehended. By the nature of a thing we meant that which a thing really is, its substance and its properties, its functions, its behaviour towards other things. We have ascertained now that knowledge is not a separate thing or entity, but a quality or state of the mind. It cannot be understood objectively ; it can only be understood when considered in its real character as a mode of being of the real self in the real world. Even so, it is only understood imperfectly. In common with pleasure and pain, love and hate, and other facts of consciousness, the first requisite for the understanding of knowledge is to have the experience of it, actually to know. Having knowledge we can to some extent discern its nature or character.

Turning now to the demand for grounds of knowledge, this demand implies that knowledge, as it stands by itself, is not wholly satisfactory, is not self-sufficient. What do we mean by *grounds?* Evidently something that supports knowledge, upon which knowledge is based. But why should knowledge require basis or buttress? We do not demand basis or support for pleasure, for pain, for love, for hate. These feelings are. We may search for their causes, in order to get or to remove the feelings: but we accept the existence of the feelings without question. Knowledge is otherwise ; its mere existence is not enough ; we want to be assured that it is *true ;* we seek some confirmation of

knowledge outside and beyond itself. But, according to the preceding view of the nature of knowledge, knowledge *is* truth. The knowing mind, itself a reality, intelligently apprehends the known thing, also a reality. Such knowing is true. There is no other meaning for truth than this knowing the thing as it is. Truth and reality are often used as synonyms: a usage conformable to the notion of one reality, which includes the knowing and the known. We need not quarrel with this usage; but may prefer to employ "truth" for the knowing of the reality, and "reality" for that which is known. If knowledge is truth, mistaken knowledge, mere supposed knowledge is not knowledge. Knowledge, then, should be self-sufficient: why this feeling that grounds of knowledge must be sought?

Our investigation has brought the answer to light. Human knowledge *never reaches the bottom*. We have no absolute knowledge. The ultimate concepts upon which knowledge is built up are not themselves *knowings*. The strength of this feeling that knowledge needs and must have some foundation is so great that the feeling is translated by many into a tacit assumption that the foundation is there—apprehended by philosophers, although it cannot be reached by ordinary minds. But we have explored philosophy, and know that the philosophers are just as unable to reach the bottom as we are. The efforts of scients and psychologists are equally futile. If grounds are indispensable for knowledge, it is certain that neither science nor philosophy has succeeded in ascertaining what these grounds are. Science, in the nature of the case, cannot possibly discover them; for science is abstract and objective—it begins by departure from the reality, and proceeds always on the same lines. Philosophy tries to apprehend the whole reality, tries to bring all knowledge into one system, and to place the system on some known basis. But its only instrument and its only material is knowledge; and how knowledge is to accomplish the task of philosophy before it has become omniscient is not apparent. At present we know the task is not accomplished.

What do we mean by *grounds?* The word is a metaphor; it means *reasons* for holding that our knowledge is true. Two

distinct notions seem to be combined in it. In the first place, reasoning must have some given facts to start from; it cannot work in a vacuum; it cannot build in the air; it must begin on a foundation of solid fact. This may be called the *factual* ground. Now, if we do not go to the bottom, if we are content to begin as we can, the factual grounds are what is called the *given*, the primitive facts of consciousness. All immediate perceptions given in experience, taken together, constitute the factual grounds of knowledge; but commonly visible and tangible things are taken as the most reliable. This division of the facts of consciousness, and this preference of the material to the mental, are initial errors. But nevertheless we do in this way get some ground to start upon. We are at least in touch with reality. Factual grounds, however, are insufficient taken alone. Knowledge is more than the bare primitive consciousness; it is a conclusion of a reasoning process; an interpretation of the given facts. The facts are many and various: for reasoning we require some one first premiss, some judgment or "principle" on the basis of which we can rationally justify our first inference. This may be called the *intellectual ground*. The factual grounds are *given;* but the intellectual ground is not *given*. At least no one has succeeded in discovering it, and putting it into words. Some philosophers have tried to remedy this lack of an intellectual ground by endeavouring to translate a factual into an intellectual ground. The feeling of hardness, resistance, tangibility, they say, gives intellectual knowledge of ultimate reality. The real is the solid, the hard, the tangible, that which occupies space. One fails to see why the solid form of matter should be esteemed more real than the liquid, and the liquid more real than the gaseous; and indeed, after considering the theory of ether and vortex-rings, one wonders how these philosophers assimilate the latest scientific theories. In any case, after our examination of psychology, the proposal to turn a subjective impression of resistance into an intellectual basis for philosophy cannot seem worthy of serious consideration.

What, then, have we learned as to the *grounds* of knowledge? We have learned this much, at least, that the feeling

we have of this want of grounds is reasonable. It arises from a true perception. Human knowledge is inadequate, incomplete, never gets to the bottom of things, never exhausts the *given*, never comprehends the whole reality. We have learned that knowledge is not ultimate; it rests upon and refers to consciousness, of which it is the development and the interpretation. So far as knowledge requires factual grounds, the demand is already sufficiently met. Immediate perceptions are the primary data of consciousness by means of which knowledge comes into being. We have learned, again, that consciousness is not everything, that it is not co-extensive with being or reality. Berkeley's *esse est percipi* is not the full truth. Being is more than we perceive. Thus we have got to the bottom, so far as we can go; but it is the bottom of our lead-line only—not the bottom of the infinite reality. Being, the reality, is too vast, too profound, to be measured and defined by human minds. Knowing, consciousness, reality—these three, we have seen, are inseparable. There is no knowing which has not its existence and its origin in consciousness; there is no consciousness which is not a consciousness of reality. But although inseparable, the three are not identical and co-extensive. Being, the reality, for us is indefinite and infinite. We know no bounds, and can imagine no bounds to the All. Consciousness is of the reality; but we have abundant reasons in our knowledge for holding that human consciousness does not embrace the whole reality. Knowledge again is a partial, not an exhaustive interpretation of consciousness. In this way we have discovered the grounds of knowledge: knowledge is based upon consciousness: consciousness is based upon being or reality. There is nothing new in this discovery. "Consciousness never deceives," has been the axiom of the philosopher and the psychologist. "Nature never deceives," is the axiom of science. But philosophy and science have been prosecuted without first investigating the nature of knowledge; and thus this dependent nature of knowledge has been overlooked or denied. The fallacious notions of absolute, abstract, positive knowledge would not have been entertained had this dependent and partial character of both consciousness and knowledge been kept in view. Nor would another conclusion, now to be mentioned, have been by some entirely missed, by others openly rejected.

This conclusion is that *all knowledge is belief*. We have already seen that the characteristic of belief is *dependence*—either upon human testimony, or upon a supposed divine revelation, or upon an accumulation of evidence, or upon logical proof. Knowing, on the contrary, has been supposed to be self-sufficient and independent. At least, immediate intuitive knowledge has been regarded as having this self-sufficient, independent character; while inferential knowledge is raised to a level with intuitive knowledge by assuming that logical deduction is infallible. But all knowledge is now seen to be doubly dependent; first on consciousness, and through consciousness on reality. Can these two axioms, "consciousness never deceives," "nature or the reality never deceives," be *proved?* Assuredly not. They are beliefs. They also require a ground or reason. Into the question of the ground or grounds upon which consciousness and reality are accepted as perfectly trustworthy, it is not necessary to enter now; for we are making no objection to belief in them. The important fact for us is that knowledge depends upon these axioms for its own existence. *Knowing* is *believing*. There is no other way of knowing. Whether there is any believing which is not knowing is a point which may remain over for a separate consideration. At present it is enough to enrich our knowledge of knowledge by this plain and certain conclusion: the nature or character of knowledge is belief. We hold our knowledge to be true, not because we can *prove* it to be true, not because we can *see* it to be true, but because we put faith in the data of consciousness by means of which we gain the knowledge, and in the larger reality behind, above and beneath the consciousness which gives us the data. The ground or foundation of knowledge is faith; and therefore knowing is believing.

Our investigation has conducted us to this conclusion. Critical examination of knowledge enables us to observe its dependence on the data of consciousness; and also the dependence of these data on the reality. But the actual birth

of knowledge from the bare consciousness is hidden from us. In a general survey the dependence of knowledge upon consciousness is apprehended; but neither in memory nor by logical reasoning can the thinking mind get back to a point where the consciousness can be first seen in a stage where knowledge is not yet evolved. To imagine a stage wherein even consciousness was not yet, but being or reality alone existed, and to watch the emergence of consciousness from the pre-existing unconscious reality, is manifestly impossible. Watching, observing, is itself an activity of a conscious mind, and cannot exist when there is no consciousness. No science attempts to describe the origin of knowledge. Psychologists have made the attempt, but only long after the origin of, and only by means of the knowledge which has been previously evolved. Thus practically there is no knowledge which can be examined except by previous knowledge; and this knowledge exists in and as the knowing mind. In consequence of this actual state of the case, knowledge depends not merely on consciousness in general and reality in general; it depends specifically on the three fundamental certitudes: the self, other selves, and the real world. For the details of the proof we must refer to the preceding investigation. Here it is adduced as confirmation of the conclusion that all knowing is believing. We cannot know without believing in the self as the conscious being and the knower. To get knowledge out of a mere stream of consciousnesses, a fleeting succession of presentations, a series of varied, loosely connected seeings, hearings, touches, smells, etc., is impossible. Knowing is a believing in the self as having the ability to observe, to judge, and to infer. Without belief in memory, without belief in other selves, without belief in permanent and orderly things and events, there can be no knowledge. Thus, both by investigating the general character of knowledge, and also by a more exact observation of the way in which knowledge actually comes to be, we are put in possession of this important conclusion: human knowing is believing: faith or trust is its essential character.

CHAPTER V.

KNOWLEDGE AND BELIEF.

KNOWLEDGE is belief. This is not an identification of the two terms as mere synonyms. To say all knowledge is belief is not saying that all belief is knowledge. All knowledge is consciousness, but all consciousness is not knowledge. The one mind is and feels the two states called knowledge and belief, but it does not feel exactly in the same way in a knowledge which is belief, and in a belief which is not knowledge. By knowledge we mean mental vision and assertion. In knowing a thing we comprehend it, grasp its parts and functions as a unity, express our concept by a name, and explain the name by a definition. In belief we apprehend the existence of a thing, give it a name, assert its reality, but feel our inability to comprehend it; stop short of a definition, or define it only so far as to indicate its existence and something of its character.

That knowledge is belief is not a new discovery. Hume said knowledge is belief; but he concluded that man has no knowledge outside mathematics, and his notion of belief resolved itself into mere custom or habit, irrational though ineradicable. Kant clave to the notion of absolute knowledge achieved by pure reason; and regarded belief as mere personal conviction or feeling, which cannot be imposed upon another, cannot be made the foundation of objective and necessary truth. Generally speaking, philosophers are reluctant to admit that faith is the foundation of knowledge. Spencer would escape from the admission by his "universal postulate". But what are postulates and axioms? Are they not actually recognitions of the absence of knowledge by the assertion that these postulates and axioms are true and trustworthy? In spite of all reluctance, the human mind

cannot have any knowledge which is not essentially belief; though some succeed in shutting their eyes to the unwelcome truth.

If this doctrine seems strange and hard to receive, this arises from inveterate prejudice. In knowing, we have habitually neglected to observe its subjective character; we have constantly regarded the objective contents, the known, as the whole of knowledge; consequently it is difficult for us to perceive that this knowing really is our mental activity, that its certitude is our feeling, that the knowing really is believing. The actual fact of knowledge is that we, having a concept, a judgment, a definition, accept it by an act of faith; we take it as true, that is, we trust it. There is no other way of knowing for us human beings; nor does any other way seem conceivable. Kant supposed that other spiritual beings may be able to know in a way different from ours; which is a credible supposition; but the supposition does not include any conception of what this superhuman way of knowledge is.

To accustom our minds to this true conception of knowledge we need to dwell upon it, and to make its grounds familiar to our thought. There is no other way than to traverse over again and again the course we have already pursued. If we have any knowledge which is not belief, let it be indicated. There is no absolute knowledge; of that we have satisfied ourselves. But is there any *positive* knowledge? Positive knowledge, it may be said, is knowledge placed there; set down before the mind; it is true, it is certain, it may be taken as positive fact, without further question. But this is mere arbitrariness; it is not rational behaviour. It is an unjustifiable refusal to think about the nature and grounds of knowledge. We have some certain knowledge—no one disputes this; but the fact of knowledge suggests, cannot exclude the question—what is knowledge? Now, if there is any positive knowledge—positive in the sense that it is not belief, does not depend upon anything outside the mere statement of the knowledge itself—let at least one instance of such knowledge be given. Two and two are four—is not that positive knowledge? We gained that knowledge many years ago; we have held it ever since; it never varies; it is set, posited, immutable. But what is it that makes this verbal proposition knowledge? It is just the fact that this is our mental judgment, yours, mine, everybody's. We believe it; we hold it to be true; this is the knowing of it. If we were not sane, reasonable beings, if some of us held that two and two are three, others that two and two are five, others again held at one time one opinion, a different opinion at another time, there would be no knowledge. Again, if this "two and two are four" had no connection with, no use in the objective reality, if it were merely a subjective conclusion holding good in the mind alone, this would not be real knowledge, but only mental imagination. In fact this bit of arithmetical knowledge is grounded on belief in human rationality, and in the existence of at least something answering to that rationality in the external world.

In the real world, wherever we begin, and to whatsoever particular we direct attention, it is evident that knowledge is belief. For knowledge of every kind is related to and rests upon experience, meaning thereby all the successive states of consciousness, including among them our own thinking and reasoning. A house cannot be built without the use of bricks, stones, or wood, or some other material. It might be built of blocks of ice; the Esquimaux makes a dwelling out of snow. But in every case the material has to be used and trusted. So with our knowledge, it is not an ultimate and self-sufficient edifice. It is put together out of feelings and facts: the data of consciousness. All these feelings and facts are sound and good for use, if taken as they are in connection with their surroundings. This is the fundamental belief on which knowledge is based: and it is only and wholly belief. The mental activity itself, by which the materials, the data, are analysed, classified, and interpreted, is itself a datum, a given fact or actuality, which is and must be accepted and trusted. It is impossible to criticise and test any particular piece of reasoning, except by the reason; to get behind the reason, to stand apart from it, is as impossible as it is for the human body to stand upon itself. And it is equally impossible to criticise and test the given facts of consciousness as a whole. We can only criticise one part by knowledge obtained from another

part. Hence it is evident that knowledge is belief: first, the knowing mind believes in the feelings and facts of consciousness, and secondly, it believes in its interpretation or understanding of those given facts.

Real knowledge is not a purely intellectual function. It is a compound of consciousness or feeling with intelligent judgment. The two are inseparable: though we sever them in our imagination, they are not really severed. And of the two elements of the compound, *feeling* is the first, the ultimate and the authoritative: the interpretation follows the facts and submits to them. On the other hand, the uninterpreted feelings, taken as they come, without reflection, do not give us knowledge. The intelligence not only receives the facts, but understands, infers, so attaining knowledge. This identification of feelings with facts may appear strange. Yet what is a fact, a thing, but something which exists for us by our feelings —the sensations and the internal feelings? It is a real thing, objectively—you say—a thing not only to our feelings, but existing apart from them. Granted that it is so, the knowledge of its objective existence is only attained by us through our sensations and feelings. This demonstrates that our knowledge, whether of a stone or a star, or of a soul, really is belief. We must and do *believe* the consciousness by which alone we receive the impressions of any existence whatever. And having received the impressions with an undoubting confidence that they are true and trustworthy, we *believe* those intelligent inferences from them which are our knowledge.

Take any instance for examination: iron, for example. We all know iron, in the poker and the grate, in knives and nails, in horse-shoes, rails, cannon-balls, and other forms. Our senses give us the colour, hardness, heaviness, malleability and durability which are its conspicuous qualities. Common knowledge, however, carries us but a little way. My knowledge of iron, I must confess, is most evidently belief —an echo of general belief, and especially of scientific belief. The chemist has a more complete and exact knowledge; he can tell us its specific gravity; he knows it as one of the seventy elements. But what is his knowledge of iron? It depends upon observations and experiments made by himself

and other chemists. On these grounds he knows iron to be a permanent substance with unchanging properties, the same in character in all parts of the world, whether hidden deep in the earth or on the surface; and iron has maintained this constant character through long geologic ages, and maintains it in all the world, in other worlds, and in interstellar space. Is it not clear that this knowledge is belief? If knowledge is separated from belief, and taken to be immediately apprehended without dependence upon anything except this immediate apprehension, then the chemist can only know so much iron as he has personally examined. If you allow other examination by other chemists to widen his knowledge, still the knowledge falls far short of what is meant by the word "iron". Universality never comes within man's immediate apprehension, and wherever a universal is known, there the knowledge is belief. Think of the law of gravitation. Every mass of matter gravitates towards every other mass; and not only visible and tangible masses, but also invisible molecules and atoms. Who *knows* this by his own observation? The knowledge of the law of gravitation is a belief.

Even knowledge which falls within the personal experience of each individual is also belief. We know things by immediate apprehension—with the help of a large admixture of belief. This reservoir-pen which I hold in my hand is at this moment for me an immediately apprehended thing. I see it, I grasp it, I know it as the pen which I have had in my possession for more than a year. Is that so? I see it now; I did not see it an hour ago. How do I *know* that this pen is an enduring thing, which abides when out of my sight? I *believe* its permanent existence. But how have I any grounds at all for that belief? I remember the pen; I trust my memory. More than this, my knowledge of the pen means that it will continue to exist. My knowledge of a permanent thing not only refers to the past, but to the future. All expectation is belief. "Science," says Professor Pearson, "for the past is a description; for the future a belief."[1]

It is clear that all human knowledge, particular as well

[1] *Grammar of Science*, p. 136.

as universal, common as well as scientific, while it has its original data in immediate consciousness, far transcends that consciousness in its extent, and adds to that consciousness what the bare consciousness never contained nor could contain. Our consciousness exists in the form of *time:* moment succeeds moment: nothing in it is permanent. Our thinking also being a part of our consciousness, is a time-succession. Our knowledge passes beyond this form of time, and makes its judgments as to *what is*, not as to the merely transient. Without being able to reach eternity, it does extend to permanent durations, some of which, as for instance the unchanging character of the chemical elements, of the laws of motion and of gravitation, are independent of time. Plainly this knowledge is belief. But belief in what? One may say, "Belief in the facts, in the things, in the nature of things". And this expression is evidently true. Vague as it is, it is a faithful expression of the state of mind of a student of nature. Feelings of reverent homage towards and confidence in that whole of things which is objectively contemplated are frequently expressed in scientific writings. The scient who confines himself to his special subject-matter, whatever it may be, and does not discuss the whole of things, can proceed without trying to apprehend what he means by "Nature" or "the facts". To us, after our preceding investigation, it is clear that he means the world of real things, the external world, as distinguished from the human mind. Nevertheless it is a great and noteworthy fact that "science" does actually, and by its own confession, rest upon belief; and therefore its knowing really is believing. And it is noteworthy too that, as Wundt points out, the splendid successes of science are due to this believing spirit. Science begins by accepting phenomena as they appear, and wins its knowledge not by doubt, but by an abiding confidence in the facts given to it for study.

As a matter of fact, men do for the most part believe, without considering what it is that they believe. There is a natural tendency in human minds to regard that as peculiarly trustworthy which they actually do trust, and find by experience trustworthy. Hence the physicist is led to regard visible

and tangible things, "hard, solid facts," as his objects of faith; while the logician and the metaphysician, on the other hand, incline to build upon logical laws and necessary principles. Between these two classes of thinkers much antagonism has been manifested; and belief, being a subjective principle, has sometimes seemed to the scient, in spite of his own constant resting in it, a dangerous principle; while its opposite, doubt, has been glorified as a valuable principle for the acquisition of knowledge. We can discern in the late Professor Huxley's acknowledgment of the necessity of belief for science traces of this distrust of the principle, and of a desire to limit it to a minimum. "The one act of faith in the convert to science is the confession of the universality of order, and of the absolute validity at all times and under all circumstances of the law of causation. The confession is an act of faith, because by the nature of the case the truth of such propositions is not susceptible of proof. But such faith is not blind but reasonable, because it is universally confirmed by experience, and constitutes the sole trustworthy foundation of all action."[1] This is a remarkable confession from so redoubtable a champion of agnosticism; and manifests his intellectual honesty. But it is meagre and unsatisfactory. It suggests that the scient by this one act of faith emancipates himself thereafter from all further obligations to a necessary but unwelcome principle; and attains the right to possess knowledge without any further exercise of faith. Knowing is believing, not once for all, but continuously; not merely in the gross, as expressed by the phrases, "the universality of order," the "law of causation," but also in each several perception and judgment. The nature of the whole of knowledge is the nature of every separate act and part of knowledge.

Scientific faith in the trustworthiness of facts and in logical inferences from facts is that "spirit" of science which leads it on from victory to victory. Like faith manifested in other directions, scientific faith is liable to become superstition and fanaticism. It runs into excess and extravagance in minds which set no bound to the scientific imagination and overleap

[1] Huxley's chapter in the *Life of Darwin*, by his son, vol. ii., p. 200.

the limits of actual knowledge, to revel unrestrained in the speculative license of mere hypothesis and theory. The scientific imagination has its legitimate function. Its task is, first to conceive an hypothesis in accordance with known facts ; then to devise a " control-experiment " ; an experiment which will determine whether the hypothesis is true or false. But a scientific imagination which constructs some theory of the universe, on the basis of physical facts alone, and would impose this theory on the human mind as credible and even authoritative, has parted company with reason. Agnosticism seems to me a fanaticism of this kind. It arbitrarily sets an imaginary line round some regions of thought called " the knowable " ; as arbitrarily excludes other regions under the appellation of " the unknowable " ; and then offers its theory of the universe to a mutilated and bleeding humanity as a philosophical system. This is the fatal mistake of Herbert Spencer in his *First Principles*, where with a *naïveté* which is almost ludicrous in spite of the grievous harm it has wrought, the great synthesist proposed gravely to appropriate the whole of the knowable for science, leaving religion to enjoy undisputed possession of the unknowable. "The terms proposed by science resemble those of the husband who suggested to the wife, as a basis of human harmony, that he should take the inside of the house, and she the outside." [1]

Philosophy, as we have seen, has not attained to knowledge, and therefore we shall not find in it anything which can prove itself to be an exception to the rule that knowing is believing. By an induction as wide as the whole range of actual human knowledge, and by a deduction from the nature of knowledge itself, this conclusion that knowledge is belief seems to me to be firmly established, and to be in no danger of being shaken, by whatsoever criticism this book may have to undergo. It seems to me a conclusion of fundamental and far-reaching significance, and to be by itself alone an ample reward for all our long and laborious investigation.

What difference does it make when we recognise that all our knowing is believing? In one way, no difference at all.

[1] *Herbert Spencer: The Man and his Work*, by Hector Macpherson, 1900, p 10.

All that was knowledge before is knowledge still. The multiplication table is the same ; the rule of three holds good ; fire burns and water quenches thirst ; the laws of motion and the ten commandments are unchanged. No certain knowledge we possess is in any way injured. But we began our investigation with the hope of ascertaining something of the nature of knowing, and this clear and sure result, that all knowing is believing, is our reward. Knowing, taken in the sense of that which is comprehensible and definite, the sum of our mental judgments of particular beings, things and occurrences, is now known to be not ultimate and supreme, but secondary and dependent. Knowledge depends upon belief. Belief is the first and the deepest hold we have upon the reality ; and this feeling of trust, of confidence, is the root and ground of all our knowledge, its essence, its real nature.

To enter into a full consideration of the value of this discovery, and of its influence on our thinking in general, is not within our scope. The greater part, almost the whole, of human knowledge consists of a mass of scattered particulars, a portion of it being gathered into system and called science ; but the vitally important knowledge is knowledge of the whole, that knowledge usually called philosophy and religion, in which regions of thought, as we have seen, abstract and objective knowledge does not exist. It is in this region and in teleology, which belongs to it, that the discernment of the real nature of knowledge will have its practical use. No longer will the true but misinterpreted maxim, " we cannot know, we can only believe," have a chilling and depressing influence. We perceive now that this limitation does not apply to philosophy and religion only, but that it is equally a limitation of common knowledge and of science. Seeing that belief is the foundation and the nature of all knowledge, that where and only where we firmly believe have we certain knowledge, we shall cease to depreciate belief.

Since knowing is believing, our inquiry into the nature of knowledge necessitates a study of belief. We have to free ourselves as far as we can from the impression so easily produced that two names must stand for two things. Knowledge and belief are not two elements like oxygen and

hydrogen ; they are not two sensations like seeing and hearing ; they are not two different directions of mental activity like memory and expectation. To find any analogy which will exactly express their relation is not easy, perhaps is impossible. The best way of achieving a right conception is to go straight to the facts. The fundamental fact is the unity of the mind. It is one mind which perceives, thinks, questions, doubts, believes, knows. Thinking, questioning, doubting, we may leave out of view ; these being transitory states which pass away when knowledge and belief arrive. The first state we have to notice is perception—the intelligent consciousness which is not mere sensation or feeling, but the mind's awareness of *something* which is at first only perceived ; not as yet pronounced to be this or that. The mind contemplates this new and strange *something*, in order to ascertain *what* it is. This mental effort and purpose is of the nature of *belief:* it attributes already *meaning* and *character* to the as yet unknown object. A mind to which every new appearance came bringing with it no feeling of expectation of knowledge, would not care to note its features attentively. Experience produces the belief that, to a large extent, things have a knowable character, and a character worth knowing. This common-sense feeling is in the mind of the trained scient deepened and heightened until it becomes a firm and enthusiastic belief in the order of nature, in the universal presence of law, in the impossibility of any single atom being out of place, of any single phenomenon being without its regular causes and effects. Belief then is a receptive, acquiescent, and expectant state of mind. The object, whatever it is, is trusted. "I do not understand it," says the scient, "but I am sure that, if I could only find the clue, I should be able to see how it, this thing and no other, comes into being just as it is, and not otherwise. And I am sure that my knowledge of the thing would be in harmony with all my other knowledge ; or would supply some lack in that knowledge, and make the whole truer than before." Thus belief is a real reaction or response of the mind to the impression made upon it by the object : it is the response of intelligent feeling. When knowledge is attained, there is a

further advance and a greater satisfaction. The mind now *sees* how the thing is constituted, how it is related to other things, its order, class, species ; its antecedents, its consequents ; the general law under which the particular case falls ; the analogy between this law and other laws, and so forth. But none of this knowledge is separate from and independent of the preceding perception and belief. Without the perceptions and the belief the knowledge could not come into existence : the perception and belief are not displaced by the knowledge, but are incorporated in it ; and it is a mental growth which has its roots in them. On this account we may say knowledge is belief, and something more. This something more is different, yet the same. We may perhaps compare it to the buds, leaves, and flowers of a tree which are development of the cell-growth in the tree. Without this general cell-growth leaf and flower could not form themselves. Leaf and flower are distinct forms, and yet the cell-life is in them, and produces them. Knowledge, the clear mental conception, the definition, the scientific formula or law, is something more, added to belief. But on the other hand, knowledge again falls back into belief. As we have seen, the definition is never exhaustive, the conception is never adequate, knowledge is never perfect. However much is known, the whole is not known. And what if that unknown whole would, if it were known, seriously alter, or entirely falsify, all the knowledge we have? That possible question underlies all and every part of our knowledge. What is our mental refuge in this strait? Knowledge never reaches to the bottom. Is it then all, perhaps, foolishness or falsity? Knowledge is dumb : science can suggest no reply. What then? Is the human mind driven to despair? Not at all. Consciously or unconsciously the mind falls back upon belief. Thus our knowledge is doubly belief : it begins by belief in the given facts, the data of consciousness, including among these data the human mind itself with its normal powers : on the basis of this initial act of faith it interprets the data and forms the judgments we call knowledge ; but lo! it discovers that its powers are inadequate to the greatness of the task imposed upon it—it can only achieve knowledge by

a new act of faith, by *believing* its own interpretations to be true and trustworthy.

Belief cannot be safely distinguished from knowledge until we have firmly grasped their essential unity and inseparableness. There is no belief which is not also knowledge to some extent. We cannot believe except as we believe *something;* and the something believed is thereby mentally apprehended. Belief, therefore, has, at least, a minimum of knowledge, if it be no more than that the something *is*. But belief may be strong and sure where we cannot define, cannot describe, cannot explain. Knowledge, on the other hand, although it is commonly regarded as being definition and explanation, always is in reality, belief. If it is definition and explanation, these definitions and explanations are known by *believing* them. If knowledge seems to excel belief by virtue of its more precise definitions, belief really excels knowledge both in quality and in extent. Belief is the truer response to the reality. When they are separated—as human error often means and tries to separate them—knowledge is not true at all. It is false. It gives itself out to be a knowledge of the thing *as it is*—and this it is not. Belief, on the other hand, trusts the reality, apprehends it as best it can, and feels that it cannot penetrate its ultimate mystery. This is the truth of our relation to the reality. Again, belief is larger than knowledge. Knowledge, because it is definite, is necessarily finite: cannot reach to the whole reality. Belief is not so limited. We can and do trust beyond the range of our knowledge. Indeed, if we did not we should have no knowledge at all. Universal belief is the first requisite for the acquirement of knowledge. Nature takes care that in childhood we shall all begin so. Only later, in order to clear away an evil growth of errors, prejudices, superstitions, does the sharp-edged axe of sceptical criticism prove useful. But an axe-edge is not a seed-bed: no knowledge will grow upon it. For the growth of knowledge we have to return to faith. Where knowledge stumbles and comes to a dead stop, belief can still continue. We begin, albeit unconsciously, by trusting the whole reality; when knowledge ceases we can go on, and in fact we do go on, trusting.

If we consider belief and knowledge separately, belief is seen to be the earlier response to the reality given in perception, and the fuller reception of what is given. Knowledge is secondary, and falls short of a complete apprehension of the whole nature of the given. Do not these differences destroy the identity of knowledge and belief? This is the actual result *if* we fall back into the error of abstract knowledge. We can only avoid the catastrophe by holding fast the truth that all our knowledge is grounded upon belief—is true and certain only because it is belief. Consequently confidence in the intellectual intuition, and in its formal expression in definition, cannot be and must not be so great as our confidence in the underlying reality in which we believe. Knowing only reaches to some parts or aspects of the real thing: belief is confidence in the whole thing as it is given, although it is only partly known. Belief is always true and right—*except when it pretends to be exact and adequate knowledge*. Knowledge, however, is not superior to belief, because it is exact and adequate. On the contrary, knowledge is always wrong *when it claims to be exact and adequate.* Knowledge is only true and real when it recognises its own failure to attain to an exact and exhaustive comprehension of the whole real thing or fact; when it bears in mind its own imperfect and provisional character, its liability to be superseded by larger knowledge. Real knowledge cannot maintain itself by ignoring its imperfection, and the possibility of its being displaced by its own growth. It maintains itself by falling back on *its real character as belief.* We admit that we have no absolute knowledge; we believe that our interpretation of the reality is relatively true, that is true *for us*, in the light that is given to us, in relation to our capacity of vision. Thus our knowledge becomes certitude by an act of faith.

The assertion that "belief is always true and right, except when it pretends to be exact and adequate knowledge," may seem to be a startling dogma. Is not the world burdened by false beliefs? We, however, mean by belief only true belief, as we mean by knowledge only true knowledge. Our inquiry is into the nature of knowledge and belief—does not

extend into an investigation of the nature of error, whether in knowledge or belief. Belief is belief in the reality; knowledge is knowledge of the reality. An erroneous or false belief is a misplaced confidence in some groundless conception of the reality, in some mistaken interpretation of, or inference from, the given facts. In this respect belief is as liable to error as knowledge is. Perhaps it would be more correct to say, the errors of belief are errors of knowledge. No one really means to trust in a lie, to take his stand upon what is a non-existence, a void, a nothing. Nor indeed is that a possible state of mind. Belief is a feeling, and cannot exist apart from a feeling of *something*. However a misinstructed and deluded mind may fail in its endeavour to think the object of its belief, and to clothe its thought in words, the intention of belief is right; it means to trust in the reality and in nothing but the reality. On the other hand, however wise and learned we are, in some degree, in some respect, our knowledge and our definition must fail fully and correctly to apprehend and comprehend the object.

Summing up these conclusions, we observe (1) that belief and knowledge both are intelligent apprehensions of reality; (2) belief is the mind's acceptance of, resting in, and acting upon, the real which is given in, or manifested to, consciousness; (3) knowledge is mental vision, or judgment of the character, marks, composition, behaviour, of the real thing; (4) all knowledge is belief; (5) to distinguish knowledge altogether from belief is impossible, but there is a difference between a belief which we do not call knowledge, and a belief which is also knowledge. In the one case we feel and own our inability to give a full and perfect definition of the thing believed; or it may be to give any account of it whatever, other than that it exists. In the other case, there is a more or less closely approximate description of the thing, which may pass current as positive knowledge; but in reality there are no perfect definitions in our knowledge.

Most important is it, for the understanding of belief and knowledge as they really are, to grasp firmly the fact that they are names of a unity: the one living, feeling, thinking mind apprehending and responding to the reality in which it

lives. Consciousness, belief, knowledge—the three words all mean our awareness of the real; the one mind often, nearly always, being all three at once. We perceive, believe, and know as a unity. Consciousness may exist in connection with doubt. In developed man, however, consciousness is normally belief in the feeling or fact; and in most cases this belief is also to some extent knowledge. There are cases, especially when the whole reality and ultimate unanalysable aspects or qualities of the reality are objects of thought, in which the inability to attain knowledge is keenly felt. It must be remembered, however, that we are apt still to fall under the influence of the old habit; and in lamenting lack of knowledge to be sighing for abstract objective knowledge.

CHAPTER VI.

THE CERTITUDE AND VALIDITY OF KNOWLEDGE AND BELIEF.

ALL knowledge is belief. Certain knowledge is belief in which we have no shadow of doubt, on which we rest in undisturbed security, and act with perfect confidence. Certitude is belief. What, then, is the *validity* of knowledge and belief? The notion of validity implies that there is an ultimate ground which underlies and sustains these ultimate beliefs. What is this ultimate ground? Is it a knowledge? Is it a belief? What guarantee have we that in believing we are not deceived? The notion of validity is the notion of a desideratum. We want to know the *object* of belief, and to be assured that this ultimate object is perfectly trustworthy.

As matter of fact, we are aware that human minds do not generally push their inquiries to this ultimate question. They are content in believing their knowledge, without endeavouring to ascertain the ground of its validity. They take their stand upon the fact that they have some certain knowledge, some certain beliefs, without seeking to discover the ultimate ground or justification of this certitude. In our investigation we have noticed that there are three recognisable stages through which the mind may pass: (1) childish confidence; (2) reflective or scientific belief; (3) philosophical reflection. Many never enter this third stage.

The first stage is that of ideal innocence before the discovery of error and deception. In this stage to believe is natural, and there is no feeling that the fact of belief requires justification. The child accepts its knowledge and belief just as it and we all accept consciousness. Belief is part of its nature. Red is red, blue is blue, fire burns, food satisfies hunger, water quenches thirst, iron is heavy and falls, smoke is light and ascends: these are facts of consciousness univer-

sally accepted in respect to which doubt and difficulty do not arise. These immediate consciousnesses recognised and remembered become knowledge, and as their recurrence is expected they become beliefs. Taking belief in its earliest simplicity, when as yet no illusion has been detected, and no doubt has disturbed its perfect security, belief is the natural reaction of the mind in its intercourse with the world of things. Belief is in harmony with *being*, with the *facts*, with the *nature of things*. At a later age, when the consciousness of fallibility has arisen in us, this primitive simplicity of belief is despised as childish credulity. But in itself it seems to deserve a better estimate. Although it is not our happy condition to be free from the liability to illusion and error, if we can imagine a race of intelligent creatures whose beliefs always harmonise with the reality, would they seem to us irrational and deluded? Always instinctively to believe the truth—is that so undesirable and contemptible? However, this is not our lot: we all inevitably pass out of this stage of childish belief. But not altogether. We retain to the end our primitive belief in *consciousness*. Illusions and errors we attribute to misinterpretation of the facts given in consciousness.

The second stage I have called reflective or scientific. It is the scientific stage, because to it all scientific belief belongs; but it is better to call it *reflective*, because it includes much knowledge and belief which is not scientific. This second stage is not an abandonment and reversal of the first stage. It is, in fact, a continuation of the earlier belief with the removal of ascertained errors, and precautions against the intrusion of other errors. No new principle, no new ground of belief is discovered. Science is nothing but primitive belief instructed by experience, trained to criticism by the exposure of past illusions, on its guard against hasty interpretations, based now on repeated and accurate observations, on planned experiments and logical reasoning. Knowledge which is clear, necessary, congruous, verified, universally assented to, is *trusted*. Beliefs which are natural, necessary, rational, harmonious, inexpugnable, are *trusted*. Just as it was in the preceding stage, so in the reflective, belief in harmony with *being*, with the *facts*, with the *nature of things*,

is satisfied with itself, is certitude. We do not find that any science raises the question of its own validity. Science is essentially belief in visible and tangible things, in invisible forces and laws, in universal order and causation. But, as we have seen, science is absorbed in abstract departments, never undertakes the study of the whole reality. In extra-scientific knowledge, in psychology, ethics, teleology, we have much certain knowledge and belief, which most men hold in the same way as the scient holds his knowledge. Reflection and criticism have been employed for the elimination of error; and the truths which remain after this process are held to be true and trustworthy, without entering upon a final examination of the nature and grounds of knowledge and belief.

Essentially, then, the second reflective stage of belief is identical in character with the first. The human mind holds its knowledge and belief to be valid, without having discovered its ultimate basis; even without having perceived that there is any need to seek for an ultimate basis. Knowledge and belief are, first of all, practical. They are needed for the preservation of life, the satisfaction of wants, the attainment of ends. When knowledge and belief guide to successful action, are verified in a continuous experience, they seem to require no other justification. The great majority of men have little interest in merely speculative knowledge. Those who seek knowledge for its own sake are generally absorbed in special departments of knowledge; and being firmly persuaded that science is true knowledge, they are prone to despise and dislike metaphysical subtleties. As matter of fact, then, the mass of men believe without knowing *what*, and without knowing *why*. Their knowledge and beliefs consist of a number of particulars, fragments, and isolated systems, which have never been brought into a unity, never traced down to their ultimate basis.

There is a third stage which we have called philosophical reflection, in which this uncritical belief is felt to be unsatisfactory. The philosopher wants to know the whole truth, the whole reality, to have a reason for every belief, to bring all his knowledge and all his particular beliefs into one system, and to be able to demonstrate the truth of the system. Philosophy

working under the assumptions that knowledge is absolute and abstract, that the intellect is the supreme judge, has not succeeded in ascertaining the ultimate basis of truth. Our investigation of knowledge is recognised as a branch of philosophy, and has required of us an examination of philosophy in order to ascertain whether it contains knowledge. Having been obliged to answer that question in the negative, we find ourselves at last face to face with our ultimate question—what is the basis of knowledge? what is the guarantee of its validity? This question, by the discovery that all knowledge is belief is changed in character. We now cease to seek for an independent, self-sufficient, all-embracing knowledge. Such knowledge we perceive to be non-existent, and impossible. We ask now—what is it that we *trust?* *That which we trust* is the guarantee of our belief, assures us of the validity of our knowledge. Our intellect is not the final and supreme authority. Intellect has its proper functions: it criticises its own judgments; it detects and rejects fallacies; but it never can of its own power alone attain to one single instance of real knowledge. To know we must first of all believe. What is the *object* of belief? What is it that we actually do trust? In this investigation we exclude all assumptions, hypotheses, theories. We look around and within to observe the real facts as they are. If we can *see* them, we have something to say: if we *see* nothing—then, silence. What is it that we have *seen?*

We have seen that our knowledge is actually based on the three fundamental certitudes—self, other selves, the world of real things. We have also seen that knowledge is based upon consciousness, and consciousness upon being or reality. In the first stage of reflection, that to which science belongs, it is based upon the three certitudes. Man can and does know, to some extent, before he criticises knowledge, before he analyses mental experience. Criticism and analysis are impossible before some amount of knowledge has been acquired: for it is the knower who criticises, and his knowledge is the tool and the test which he uses. The three certitudes are the basis of common knowledge and the sciences: a basis so perfectly trusted that the mind in this stage feels no need of formally

asserting them. These certitudes are beliefs. We believe in self, other selves, and the world as real existences. We believe that they are ; we know that they are : in this case knowledge and belief are identical. Knowledge in this stage is the perception and partial understanding of given realities. It is belief of logical conclusions based on knowledge, and belief of real beings, real things, real happenings, a mass of diverse realities in which we distinguish the three certitudes as the certainly known realities : known as to their being, only partly known as to their characters and powers. In common and scientific knowledge all the conclusions which are held as certain truth are built up on these fundamental beliefs. Hence in this stage all our knowledge is ultimately based on the reality of self, other selves, and the world.

When the mind returns from its absorption in some department of abstract knowledge to a contemplation of its real position in the real world, it cannot rest satisfied with this threefold basis. Evidently these three realities are closely connected, are inseparable ; and as evidently we do not know all about them, we do not know that these three concepts cover the whole reality. Here we are in the stage of philosophical reflection, to which psychology and our own inquiry into the nature of knowledge belong. In this stage the attempt has been made to effect a perfect analysis of experience, quite independently of the three certitudes : but this attempt, we have seen, is illusory, and leads to nothing. The certitudes are realities, and cannot be set aside. The philosopher is the self taking advantage of all the experience and the knowledge already acquired, and with its aid he essays to re-examine and reconstruct the whole of knowledge. Even so he cannot discern the beginning of knowledge. But there is no difficulty in discerning that knowledge deals with and rests upon the data of consciousness, and that consciousness rests upon reality.

The first and the last ground and object of belief is Being or the Reality. The philosopher returns to the attitude of the child. After he has traversed the whole circuit of human knowledge, has entertained and rejected a thousand errors, enriched though he is by conceptions which are as accurate as

is possible for his mental capacity, he finds that, as at first, so in the last resort, he can only believe in the reality. Below this man's wit and wisdom cannot penetrate. This is the bed-rock on which we build. This is that which we actually do trust. The scient calls it "nature," or "the facts"; the philosopher may call it "reason," or "logic": the meaning of both is the being, the reality, of selves and of the physical world. This universal *being* includes ourselves, but is more and other than our individual personalities. We do not and cannot think and reason as we please : something in us rules our thinking. We do not see and feel what we choose : something without us gives, imposes, the facts which are our external world. *What* this Being *is*, we are wholly unable to apprehend and comprehend. But we can and do apprehend *that it is*. Its absence or non-existence is utterly inconceivable. Non-being, or nothing, is for us wholly unmeaning. In every single instance of consciousness, when we say "something *is*," that word "is" for us is the beginning and the end of consciousness, knowledge and belief. We cannot explain it ; we cannot think it away. Particular things disappear : the star falls, the raindrop is lost in the ocean : being *is*—we can say and think no more. To be is to be perceived—it has been said : but what then is it to be perceived ? Perceived implies a perceiver ; and to perceive is *to be*. Nor will the actuality of our knowledge permit us, finite, short-sighted creatures, to think that our perceiving is coextensive with being. On the contrary, all human perceiving is attended by a consciousness of ignorance ; an awareness that we never wholly grasp, wholly comprehend, that which we dimly perceive. If it was possible for us while we were children, or in the narrow-minded stage of common-sense, or even in the other narrow-mindedness of absorption in abstract science, to think that our limited perception is the measure of reality, this is impossible for the reflective mind which looks without on the infinite universe, and within upon the unfathomable mystery of consciousness. The actual relation of the human mind to the reality is belief, trust. Whensoever, wheresoever, and whatsoever we really know, it is because then and there we are trusting with perfect confidence in some

part or aspect of the reality which is manifested to our consciousness: and not in some part only: for we are utterly unable to separate the part from the whole, the manifested from the unrevealed. Being or reality means for us the Whole, which includes us and our knowledge. For us to think or imagine another Being, another Reality, outside of and different from the Infinite All is not possible. *Being* is the *limit* of all our consciousness, knowledge and belief. We get so far as to know and believe that *it is*: there we stop. Ask *what* is it? there is no reply. And yet there is a reply—not for the pure intellect, but for the unity of intellect, feeling, will and energy, which is the self—*Being, the Reality, is that in which we trust.* Reality is the *object* of belief; and thus the *ground* which assures us of the validity of our knowledge.

This may seem to be equivalent to saying that belief rests upon itself. Knowledge is belief; belief is trust in the reality —what is this but saying we believe in our belief? This, however, is another case of abstraction—a separating of the *belief* from the mind, and of the mind from the reality. The mind is conscious of itself and of its surroundings, of other selves, and of the world. Its belief is *itself believing.* Believing is its own actual *being* as it exists in the larger imperfectly apprehended *being* which we call the reality. Its *being* is connected with and dependent upon other *beings:* all these *beings* are connected together and mutually dependent: around and beneath them all there is *being* which is perceived but not known, and there is *being* not even perceived. No unity of the whole is known: but also no division of the whole is known. The individual man is included in and affected by the whole *being.* Between himself and the whole there is action and reaction. His belief in the reality so far as he believes in it, is the natural and fitting response of his own *being* to the *being,* which is larger than and includes himself. Belief is not belief in belief: it is belief in the reality which is in us and without us; which works in us, in our consciousness, in our thinking, in our judging; which works without us in the temporal and spatial universe. Our trust in the first fundamental certitude is not trust in the individual self taken abstractly; it is trust in the real being of ourselves as we

are in and under the laws of the real universe. Believing is a reality: it is the true and right reality of our personal being in the midst of and in response to the whole being to which we belong. Literally, "we walk by faith, not by sight". Every step we take on city pavement, or country road, or grassy hill-side, we take by faith. We cannot *see* the solidity of the ground upon which we are about to set foot: solidity is not *visible.* We cannot *feel* that the road in front of us will bear our weight; for we are not yet standing on it. Step after step we walk on in perfect certitude, because we believe in the constancy of that association of solidity with visible appearances to which we have been accustomed to trust in the past. Just as literally, in common knowledge and the sciences, every mental judgment is an act of faith in the trustworthiness of the data of consciousness, in the validity of inference, in the reality of the object. There is no other way of knowledge. Apart from this faith we can have no knowledge at all. Trust in the reality is the real nature of knowledge, and the reality itself is the guarantee of its validity.

Thus at the close of our inquiry we are, as we were at its beginning, face to face with the great mystery, the Reality. At first we had no clear concept of reality, and in our survey of science and of philosophy we were forced to conclude that man does not and cannot *know* the Reality. But *then* we were under the influence of the notions of absolute, abstract, and positive knowledge, which we have discovered to be erroneous. *Now* our inquiry has led to new conclusions as to the nature of *knowing;* and it is therefore fitting that we should repeat the question—do we *know* the Reality?

So far as our knowledge of the nature of knowledge enables us to answer this question, we now answer it thus: Yes; we know that the Reality exists; we know that the Reality is trustworthy; because it actually is the foundation of all our knowledge and belief. It would be wrong to assert that we can and do know of the Reality nothing more than that it is, and is trustworthy; for our inquiry has been intentionally limited, and important regions of thought and fact have not been explored. But so much we can assert; we know, we believe in, the Reality as true and trustworthy.

Our conception of the Reality is vague and inadequate, but we have no doubt of its existence, and we do actually trust in it. Moreover, this concept of the Reality excludes two false conceptions which have been entertained by morbid imaginations. It excludes the suggestion that Reality may be a Chaos, without law, without order, wholly irrational. For if the Reality were a Chaos, we could have no knowledge, and no belief. It excludes the suggestion that the Reality is a malevolent power, wilfully deceiving us; for this conception contradicts the nature of knowledge, and if it could be entertained would be the destruction of all knowledge and belief. But while the nature of knowledge forbids these false conceptions, which would render all knowledge impossible, we cannot, I think, derive from our conclusions respecting knowledge any other conceptions of the Reality, than that it is, and it is trustworthy. Is the Reality a unity? So far as the mere nature of knowledge teaches us, I think we cannot answer that question. We have seen that it is possible to have some certain knowledge on the basis of the three fundamental certitudes. These three certitudes are not a final resting-place for the human mind; and there is a strong, an almost irresistible tendency to believe in a unity which includes them. But there are difficulties in the way. Pleasure and pain, good and evil, right and wrong, truth and falsehood, are antitheses in our experience which cannot be reconciled by any theory of knowledge. Knowledge of knowledge does not make us omniscient. The Reality still remains an impenetrable mystery.

The question, what is knowledge? has been answered. Knowing is believing the infinite Being: this is its nature: the Reality itself is its ground and its guarantee. How much knowledge we actually possess? what increase of knowledge seems to be possible? what kind of knowledge it is wise to seek? and in what way, under what conditions, we may reasonably hope for a good measure of success? are questions which have been suggested only, not answered. The conclusions arrived at in the inquiry we undertook are now submitted to the criticism of other minds. Some of this criticism will probably be hostile; but whatever defects and errors may

be detected in this book, I believe that its main conclusions and its conception of real knowledge will stand, and I hope it will prove to be a germ which in other minds will take root and bear fruit. There are wide fields of human thought and human life, barely glanced at in our restricted inquiry, to which this new conception is applicable, and in which it may prove helpful. Meantime what it has been given me to do, I have accomplished as I could; and, keenly sensible of the imperfection of my performance, I end, not with a feeling of self-complacency, but with joyful confidence in the truth that has been revealed to me; with wonder and thankfulness that I have been used as the instrument to set it forth.

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